

UNIVERSITY
PENNSYLVANIA
LIBRARIES



EDWARD BURNETT:
AN AGRICULTURAL DESIGNER ON GENTLEMEN'S ESTATES

Taya Shoshana Dixon

A THESIS
in
Historic Preservation

Presented to the University of Pennsylvania in
Partial Fulfillment of the Requirements for the Degree of

MASTER OF SCIENCE

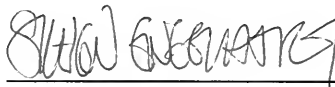
1998



Supervisor

Christa Wilmanns-Wells, PhD

Lecturer, Historic Preservation




Reader

Steven Engelhart

Executive Director

Adirondack Architectural Heritage



Graduate Group Chair

Frank G. Matero

Associate Professor of Architecture

Acknowledgments

This thesis would not have been possible without the assistance and expertise of many people. A special thanks to Christa Wilmanns-Wells, my advisor, who saw me through this process and inspired me to think in new ways and in new directions. Thanks to Steve Engelhart for reading my thesis and working as hard as he does to save Santanoni and all the other treasures of the Adirondacks. Thanks to Chuck Vandrie for championing the vanishing historic resources of the State Parks and for allowing me to take over his office for two days of researching.

Thanks to Elinor and John Burnett Vaughan for their insightful interviews about Edward Burnett. Thanks to the Biltmore Estate Archive, the Harvard University Archive, the St. Mark's School, the Adirondack Museum, the Lyndhurst Estate Archive, and the Olmsted National Historic Site Archive.

And a special thanks to my friends and family who put up with my complaints and helped me put my thesis into the right perspective; Colleen and Doug who took me into their house in the middle of the winter; Andy and Cleve for keeping the water running and the washer going in the summer I lived at the Santanoni Gate House; and the regulars at Newcomb House for the beer, food, and friendship!

Table of Contents

Title Page	i
Acknowledgements	ii
Table of Contents	iii
List of Illustrations	v
Introduction	1
Chapter One - Literature, Societies, and Universities	
Literature for the Farmer	13
Agricultural Societies	20
Agricultural Science and Universities	23
Chapter Two - Edward Burnett, the making of a professional man	
From St. Mark's to Harvard	30
The Educated Gentleman Farmer	36
Recognition and Public Life	45
Chapter Three - Edward Burnett, farm designer	
Deerfoot Farm as Laboratory	55
The Agricultural Advisor	62
The Farm Designer	66
Chapter Four - The Pruyn Estate: Great Camp Santanoni	
Treasures of the Adirondack State Park	86
Edward Burnett at Santanoni	88
The Dairy Department	93
The Piggery	101
The Poultry House	104
The Sheep Fold	106
Additional Farm Buildings	108
Fields and Pastures	109
The Santanoni – Burnett Plan	112
Conclusion	115

Bibliography	120
Appendix	125
Index	128

List of Illustrations

Figure	Title	Page
Fig. 2.1	Original St. Mark's School Building, Southborough, MA	33
Fig. 2.2	Edward Burnett at Harvard College c.1871	34
Fig. 2.3	Deerfoot Farm Sausage Factory	37
Fig. 2.4	Deerfoot Dairy & Milk Train	38
Fig. 2.5	Weston Patent for Centrifugal Machine	42
Fig. 2.6	Burnett Patent for Stopper for Liquid Containing Vessels	48
Fig. 2.7	Burnett Patent for "Truck"	48
Fig. 2.8	Browne/Burnett Patent - Fastener for Stoppers of Milk Cans	49
Fig. 2.9	Browne/Burnett Patent for Lock-Stopper for Milk Cans	50
Fig. 3.1	Deerfoot Dairy Plans	59
Fig. 3.2	Edward Burnett et al at Biltmore Estate	63
Fig. 3.3	Dow Estate Farm Complex Plan	68
Fig. 3.4	Fisher Estate Farm Complex Plan	76
Fig. 3.5	Cedarhurst Dairy Plan	78
Fig. 3.6	Whipple Dairy Farm Plan	79
Fig. 3.7	Stetson Estate Farm Complex Plan	80
Fig. 3.8	Burnett Plan of Detached Dairy Farm	82
Fig. 3.9	Burnett Plan of Horse Stall Windows	83
Fig. 3.10	Burnett Plan of Cow Stanchions	83
Fig. 3.11	Edward Burnett later in life, date unknown	85
Fig. 4.1	1910 Topographic Map of Santanoni	90
Fig. 4.2	Tracing - 1910 Topographic Map of Santanoni	90
Fig. 4.3	USGS Topographic Map & Tracing of Santanoni Farm Site	91
Fig. 4.4	Proposed Burnett-Santanoni Design Plan	92
Fig. 4.5	Back of Santanoni Barns	93
Fig. 4.6	Existing Barn Plans from Farm Complex HSR	94
Fig. 4.7	Interior Cow Stanchions with Manure Trough	95
Fig. 4.8	Burnett/Hopkins Commercial Barn Interior	96
Fig. 4.9	Full Hay Wagon at Santanoni	97
Fig. 4.10	Santanoni Creamery & New Cottage on right	97
Fig. 4.11	Boiler in Dairy Building	98
Fig. 4.12	Milk Room of Dairy Building	99
Fig. 4.13	Wash room with sink and plumbing in Dairy Building	100
Fig. 4.14	View to Santanoni Farm with Ice House behind Creamery	100
Fig. 4.15	Typical Refrigerator Room & Proposed Santanoni Plan	101
Fig. 4.16	Piggery & Poultry House to left with Sheep Fold roof to rear	102
Fig. 4.17	Proposed Piggery Plan	103
Fig. 4.18	Pig exiting Piggery stepping into manure trough	104
Fig. 4.19	Proposed Poultry House Plan	105

Fig. 4.20	Santanoni Farm Complex with Poultry House roof	106
Fig. 4.21	Proposed Sheep Fold Plan	106
Fig. 4.22	Black faced Highland Sheep at Santanoni	107
Fig. 4.23	Tool House at Santanoni	108
Fig. 4.24	New Gardener's Cottage	109
Fig. 4.25	Guernsey Herd in Pasture with Tool House below	110
Fig. 4.26	Sheep in pasture above Santanoni Gate House	110
Fig. 4.27	Vegetable Garden beyond Farm Complex	111
Fig. 4.28	Santanoni Farm fencing type	112
Fig. 4.29	Santanoni Farm fencing type	112
Fig. 4.30	Santanoni HSR Site Plan #2	114

Introduction

*"And God said, Behold, I have given you every herb bearing seed,
which is upon the face of all the earth, and every tree,
in which is the fruit of the tree yielding seed; to you it shall be for meat."
Genesis, Chapter 1 Verse 29*

Since the beginning of time, the earth and the garden have been the ideal for human beings. According to the story of Genesis, on the second day God created grasses, seeds, and fruits.¹ God created a lush and plentiful land for those created in God's image. God created Adam and Eve to live in the Garden of Eden, yet cast them out to live outside the boundaries after they ate the forbidden fruit. God cast out the two, saying "Thorns also and thistles shall it bring forth to thee; and thou shalt eat the herb of the field," bidding each to till their own fields and tend to their own well being.²

Since the expulsion from the Garden of Eden, humans have scratched from the earth an existence based on cultivating the lands created by their God. The distinction between pleasure garden and farm garden was blurred even within the confines of Eden. Was it a place of natural beauty or sustenance? Perhaps it was to be both and in so being has obliged authors for hundreds of years since to characterize cultivated lands as places of both beauty and utilitarian needs. In the 3rd century AD, the author Longus wrote in *Daphnis and Chloe*, "A thing of beauty was this garden, a fit pleasance for a prince. It lay on a high ground...It contained trees of all kinds - apple, myrtle, pear,

¹ *Holy Bible*, "Genesis" (Nashville: Thomas Nelson Publishers, 1972) Chapter 1, Verse 11.

² *Holy Bible*, "Genesis" (Nashville: Thomas Nelson Publishers, 1972) Chapter 1, Verse 18.

pomegranate, fig, and olive.”³ The passage elevates the farm garden to one fit for the roaming of royalty yet made no effort to cover the basic premise of the land, to provide food.

The rise in population of cities created an interest in escaping the congestion, noises, and smells of townlife to country living. Given enough resources, the wealthy could move outside the bustling cities to estates in the countryside, complete with both aspects of the Garden of Eden, large places of residence included areas of natural beauty as well as cultivated land for agricultural purposes. Living outside the confines of towns and cities required a self sustaining element. Kitchen and, often times, larger farm gardens lay beyond the ornamental landscape of the palace or house. From Islamic countries such as Persia and Syria in the 4th century AD to Western nations such as Italy and England in the 8th century AD, the countryside drew from the cities the wealthy to build palaces and villas surrounded by a designed panorama.

England, Ireland, and Wales were some of the most productive countries when it came to estate building. The great houses, palaces, and castles of Great Britain were only possible within the feudal system. Wealthy families headed by men wielding complete power over thousands of acres of land, toiled upon by the peasant poor, built palatial estates to display their wealth to other wealthy families. Long lanes cut through rolling landscapes, through

³ Christopher Thacker, *The History of Gardens* (Berkeley: Univ. of California Press, 1979) 14.

gates and under arches to the main house, taking in the vast spaces. While the guest strolled in the formal ornamental gardens, site plans, paintings, and prints tell us that on most estates a significant farm with its fields was tilled by the help. Often times the gardener created detailed maps of plantings while the animals and game were looked after and cataloged by the stableman.

Upon the grand estates in Great Britain an interest in horticulture was spurred on by publications authored by men such as Linnaeus, who classified and catalogued hundreds of species of plants, whose theories and methods were noted by many landholders. Hot houses, greenhouses, and conservatories began to appear on the land and worked their way into the awareness of the 19th century populace, the most famous example being the Crystal Palace by Joseph Paxton in 1851. Interest in plants grew over centuries to become a long standing fascination in Europe. Correspondence between fellow collectors of plant specimens became commonplace and the exchanging of knowledge and even seeds was practiced often. Literature on the subject circulated throughout England and Europe, and advanced trade allowed for new and exotic plants to be imported.

While wealthy landowners continued to enjoy gardening as a hobby in England, colonists in America were busy creating a new home in what was considered exceptionally fertile land. From the earliest settlement by the English and other Europeans on the new continent, it was apparent that to survive in the northern climate that seemed to be so unforgiving, one had to be

of hearty stock willing to work hard to make a better life. Most early settlers of the American continent were not wealthy but came to the new land to create a life better than they had in England, to move up from tending to the estates of the landowners in England to tending their own lands.

Once the colonists forced out the British soldiers and drew up the Constitution of the United States, America began to practice with zeal its vision of upward mobility. No one pursued this more than the author of the Declaration of Independence, Thomas Jefferson. Beginning in 1766 Jefferson kept meticulous records of his estate, Monticello, and more importantly to this thesis, his garden. Throughout Jefferson's life politics intermingled with his one true passion of Monticello, the grounds, and the garden, perched atop a bluff. His Republican party coveted the original intention of the first colonists, to create a new life out of a new land. This agrarian ideal for America was practiced at Monticello. No doubt Jefferson was one of the first architects of wealthy country estates complete with gardens, livestock, and main house in the newly formed United States.

Thomas Jefferson once wrote, "Those who labour the earth are the chosen people of God, if ever he had a chosen people, whose breasts he has

made his peculiar deposit for substantial and genuine virtue.”⁴ Early United

States leaders including Jefferson and Adams believed that the future of America was based in agriculture. The Revolutionary War was fought based on the ideals of Republican simplicity. They believed that the new country would progress and culminate into a collection of self-sustaining farms able to support itself with a minimum of outside intervention.⁵ Many of these idealists, including Jefferson, were capable of sustaining such estates. In the 1790's James Warren wrote, “Public virtue, and an attention to the public liberty are seldom found in the cities; they must be looked for in sober and manly retreats of husbandmen and shepherds, where frivolous manners, commerce, and high stages of civilization, have not debauched the principles and reason of mankind.”⁶ Believing wholly in the principles of Republicanism, Jefferson created Monticello.

Monticello was Jefferson's own answer to his call to create an agrarian America. Jefferson considered himself a farmer foremost over and above his interests of the political world. He mused in his correspondence to friends and associates of his trials and tribulations as a simple farmer. Trips overseas in the 1780's exposed him to the fruits and animals of France which he brought back with him to Monticello.⁷ His travels in the newly formed United States brought

⁴ Robert C. Baron, editor, *The Garden and Farm Books of Thomas Jefferson* (Colorado: Fulcrum, Inc., 1987) 6. From notes on the State of Virginia.

⁵ David E. Shi, *The Simple Life* (New York: Oxford University Press, 1985) 85.

⁶ David E. Shi, *The Simple Life* (New York: Oxford University Press, 1985) 76.

⁷ Robert C. Baron, editor, *The Garden and Farm Books of Thomas Jefferson* (Colorado: Fulcrum, Inc., 1987) 178. Letter to James Madison from Thomas Jefferson.

much delight to him with regards to his fields, upon hearing of a newly cultivated potato-pumpkin, Jefferson wrote, "My present situation and occupations are not friendly to agricultural experiments, however strongly I am led to them by inclination."⁸ He was often overjoyed when coming into contact with other individuals who actively pursued the agrarian life.

Although Jefferson was an ardent supporter of self-sufficiency and hand labor, he accepted and praised the benefits of mechanical tools designed for farm work. Through correspondence and affiliation with agricultural societies and subscriptions to agricultural magazines, Jefferson was exposed to new and inventive appliances for the farm. He wrote in 1816 from Monticello of "a famous" plough by Guillaume given to him for trial by the Agricultural Society of Seine.⁹ While experimenting with new mechanics on his estate, Jefferson did much to expose the brilliance of American made products. In 1808, Jefferson wrote of sending a drill made by a friend of John Taylor to the Agricultural Society of Paris.¹⁰ Always careful not to stray far from the Republican ethic, Jefferson was smart to note, when orthodox Republicans began to rumble that the state of the nation was becoming too manufacture based, that the American made manufactories would limit the nation's dependence on British products and maintain the United States' self-sufficiency. In addition, manufacturing was

⁸ Robert C. Baron, editor, *The Garden and Farm Books of Thomas Jefferson* (Colorado: Fulcrum, Inc., 1987) 185. Letter to Samuel Vaughan from Thomas Jefferson.

⁹ Robert C. Baron, editor, *The Garden and Farm Books of Thomas Jefferson* (Colorado: Fulcrum, Inc., 1987) 198. Letter to Robert Fulton from Thomas Jefferson.

¹⁰ Robert C. Baron, editor, *The Garden and Farm Books of Thomas Jefferson* (Colorado: Fulcrum, Inc., 1987) 195. Letter to John Taylor from Thomas Jefferson.

bound to produce a surplus that could be traded with European countries for products still unavailable in the United States. He recognized the need but called for an “equilibrium of agriculture, manufacture, and commerce” to balance the economy of the new country.¹¹

The recognition that the need for manufacture and commerce, in addition to agriculture, was necessary and was noted even by Thomas Jefferson. The impossibility of the ideal Republican ethic to have a country of virtuous farmers was that it was only possible to pursue by the well to do. The person without money or land soon was relegated to the cities that were so scorned by the elite. While Republicans such as Jefferson attempted to provide public education for the masses, their choice of vocabulary speaks volumes of the almost insurmountable class structure in the early days of the United States.¹² To create what Jefferson called a “natural aristocracy,” he suggested to the Virginia Assembly that the government supply education to all children, who in turn would be filtered out, as years progressed, based on merit. Through this process, a hand picked learned class would have opportunities the Republican leaders already held. This process would produce leaders with Republican philosophies, but in the process maintain a secondary class of laboring men and women.¹³ This motion was never passed.

¹¹ David E. Shi, *The Simple Life* (New York: Oxford University Press, 1985) 89.

¹² Robert C. Baron, editor, *The Garden and Farm Books of Thomas Jefferson* (Colorado: Fulcrum, Inc., 1987).

¹³ David E. Shi, *The Simple Life* (New York: Oxford University Press, 1985) 78-79.

The idea to maintain the United States as a purely agrarian nation would prove to be problematical. America was headed in a manufacturing and commercial direction created by the everyday working man and woman who believed that they too could create a better life for themselves through hard work, while some of the great city merchants also wanted to invest their capital in manufacturing ventures. The work ethic and "get ahead" philosophy of the working class maintained the exploding industrial manufactories and would later create some of the robber barons that profited by them. By 1876, the centennial of the United States, it was apparent that the first hundred years of the Republic were ones of increased wealth and property, especially for the middle class, based on new inventions, manufacture, and commerce. The Centennial Exposition of 1876, held in Philadelphia, was a showcase of American knowledge and progress. That progress was displayed to the country at large and to the world at various exhibition halls with mechanical and scientific devices. Americans were looking forward to the next century to be filled with progress, wealth, and prosperity based on such new inventions, better education, and an expanding land.

The industrial revolution allowed the self-made man of industry to live as the "natural aristocracy" did in the 18th and early 19th centuries. Country estates like that of Monticello and Mount Vernon began to appear set into scenic spots in valleys, on rivers, and in mountains. As industrialization and urbanization progressed in the East, escape from the noisy, crowded streets of

major cities became increasingly attractive to the newly wealthy. Newly made money provided stately city townhouses as well as elegant retreats, complete with all the refinements of city living. The expansion of the railroad provided quick transportation to the uncivilized wilderness.¹⁴ Coal kings and robber barons bought up large tracts of land. Well known men, like Charles Vanderbilt, William West Durant, and Dr. Samuel Webb, began to create large estates throughout the East coast.¹⁵

While the desire to make more money blazed in the American psyche, these powerful men did not forget the reason why they had worked so hard. Some of the most notable estates of this next generation of aristocracy in the 19th century still stand today including Biltmore, Vanderbilt's castlelike country seat in Asheville, North Carolina, and William West Durant's lakeside family retreat, Camp Sagamore, near Saranac Lake in upstate New York. These emblems of American progress and prosperity could not have come without years of planning. Unlike Thomas Jefferson who managed to juggle three careers, that of politician, educator, and finally gentleman farmer, these men spent endless hours devoted to making themselves wealthier, and they had little time for pastoral pursuits.

Jefferson called for an agrarian society at the turn of the century and that desire to return to the earth and do the work of the "chosen people" did not go

¹⁴ John H. Thompson, editor. *Geography of New York State* (New York: Syracuse University Press, 1966) 398-400.

¹⁵ John Zukowsky, *Hudson River Villas* (New York: Rizzoli International Publications, 1985) map insert.

forgotten by these wealthy men, but they did not do it on their own. Most large estates required the services of an architect, and with any luck an architect of high caliber and well known work to build and improve dwellings, out buildings, and grounds. Certainly, no country estate would be complete without grounds to survey from the landings, parapets, and porches of the great house, and for this purpose an agricultural and landscape expert was employed. One of the most notable of these gentlemen was Frederick Law Olmsted. Most famous for his work on Central Park in New York City and the Emerald Necklace in Boston, Olmsted was often called upon to advise in laying out the grounds of his acquaintances' estates.

Many of these country retreats were seen as complete in all amenities with the addition of a model scientific farm including fields, livestock, and innovative machinery befitting the progressive nature of the 19th century. A man knowledgeable in all aspects of agricultural improvements (especially dairy farming) was the subject of this thesis, Edward Burnett. Well known in agricultural circles for his famous Deerfoot farm, Edward Burnett first worked with Olmsted at Biltmore in North Carolina. Employed to design and manage the substantial farm for the Vanderbilts, Burnett did not stay long in the South. He moved from one station to another as an agricultural expert in the North East for wealthy men of business. After settling in Manhattan with his second wife, he opened an office in Manhattan employing architects, landscape architects,

and engineers, and ran in circles befitting a son of a wealthy and influential father, Joseph Burnett.¹⁶

Overlooked by historians, Edward Burnett's work at these gentleman's estates was significant and does deserve attention. The site of Robert Pruyn's rustic Great Camp Santanoni in Newcomb, New York, displays a stunning picture and view into the world of wealthy families, while showcasing a model scientific farm of the early 20th century. The late 19th and early 20th century saw a proliferation of wealthy men establishing grand retreats in the mountains to enjoy the fresh air and solitude, but with all the amenities of city living.¹⁷ The Santanoni Main Camp, a series of connected log pavillions five miles from the town on Newcomb Lake, could house up to fourteen people at one time. The remote nature of the site and the large number of guests necessitated the incorporation of a farm into the site. The farm complex was designed and constructed by Edward Burnett ten years after the construction of the Main Camp.¹⁸

After about forty five years of service as a productive dairy, pig, sheep, and poultry farm, the site was shut down when sold out of the hands of the Pruyn family. Unused for over fifty years, numerous barns, outbuildings, and livestock areas have fallen into ruin or disappeared entirely. However,

¹⁶ Alfred Emerson Benson, *History of Saint Mark's* (Southborough: Alumni Association, 1925).

¹⁷ Harvey Kaiser, *Great Camps of the Adirondacks* (Boston: David R. Codine, 1982). This book discusses and displays many of the Adirondack Great Camps.

¹⁸ Guy H. Lee, "Estates of the American Sportsman, No. 4: Santanoni, the Adirondack camp of Robert C. Pruyn, Esq. of Albany, New York" in *The Sportsman* (October 1929, VI:4) p. 71. This is the only published citation found connecting Pruyn to Burnett.

fascinating, representative, and important key elements of Burnett's design and extensive planning can still be gleaned from this site. The Pruyn Estate, which will be discussed in Chapter Four of this thesis, is one of the only remaining documented Burnett designed farm complexes open to the public. For years, local preservation organizations have fought to save the farm site. It is the hope of this writer, that the significance of Edward Burnett's work will aid in the preservation of the only publicly owned Great Camp in the country.

Chapter One: Literature, Societies, and Universities

*"So it is possible to be a very good agricultural chemist without knowing much beyond the names of a very few substances."
-John L. Blake in Home in the Country*

Literature for the Farmer

The farming community in America in the 19th century communicated with one another through various forms of literature. The increased land availability in the west created a boom in farming while the politics of the country continued to push for progress that would mark the 19th century and create a lingering debate, started by Jefferson, as to whether America should be an agrarian or manufacturing society. As the population reached farther and farther west, farms became more and more isolated, and farmers had very little contact with the large cities of the East Coast. To provide a link to the rest of the country, books and publications spread to farmers nationwide, agricultural societies were founded, and the United States government finally began to take notice.

One of the first 19th century farming periodicals was published in 1822 and was called *The New England Farmer*.¹⁹ It was produced in Massachusetts, and it seems fitting that one of the first progressive farmers pamphlets should come from the site of the start of the Revolutionary War won only a few decades prior. It took several years for the United States to settle in as a cohesive nation,

¹⁹ Percy Bidwell, *History of Agriculture in the Northern United States 1620 - 1860* (Washington: Carnegie Institution of Washington, 1925) 194.

but as the decades past in the early years of the republic, Jefferson and

Washington expoused the attributes of an agriarian society. Boston Brahmins, living in townhouses on Beacon Hill, began to buy up property in the outskirts of the city in towns like Watertown and Framingham. On these vast stretches of land, they created country seats complete with large houses, streaches of lawn, and experimental farms, emmulating the large estates found across the Atlantic Ocean in Great Britian.

Members of the Federalist Party after the Revoutionary War were the first to expand their land holdings out to the suburbs of Boston. Christopher Gore, a lawyer and statesman, for example, settled on Gore Place in Waltham in 1804. He took up experimental farming on his estate in America but paid close attention to the British agricultural advances. In addition to the large mansion situated on a hill, the estate was part experimental farm and part pleasure ground.²⁰ His public life took Gore to England where he actively sought out wealthy men who owned large estates, taking careful notes of the improvements he witnessed. He returned from his journeys and imported cattle which he had discovered during his journeys for his own estate in hopes of breeding his own herd of improved livestock.²¹ It was not uncommon for gentlemen of Gore's position and wealth to travel to Europe to learn and be a part of aristocratic society and values. The Gore estate was just one of dozens

²⁰ John H. Thompson, *Geography of New York State* (New York: Syracuse University Press, 1966) 9-10.

that displayed the popularity of gentlemen farming in Massachusetts. The goal of estates such as Gore Place was to revolutionize traditional farming by setting examples of what America could be, especially within the realm of livestock breeding and dairy farming.

The expanded transportation system of railroads and canals within the United States created new markets but also brought many changes to the landscape of the country. New York's Hudson Valley was but a stepping stone to new lands opening up farther west. The farms created early in the republic were beginning to show signs of worn out soil. Farmers continually left their lands in Massachusetts and Connecticut to set up again in western New York, Ohio, and beyond.²² The overworked New England farms, however, would not support the crop farming that dominated the countryside of the East Coast. On the contrary, the rocky soil was suitable for sheep farming and realization dawned that it was prime real estate for the dairy business as well. The owners of worn out farm land from the early years of the 19th century took heed of the developments in New York and quickly stepped up to take advantage of the terrain and climate that western New England offered. Once again New England became a center for experimental farming, only this time with keen interest in livestock rather than agriculture.

²¹ John H. Thompson, *Geography of New York State* (New York: Syracuse University Press, 1966) 10.

²² Lou Ferleger editor, *Agriculture and National Development and Views of the Nineteenth Century*. (Ames. Iowa: Iowa State University Press, 1990) 56.

It was not until the introduction of better English breeds of cattle onto American farms that the quality of dairy products took an upturn in the 1840's.²³ Dairy farms in the Berkshires of western Massachusetts to New York were verdant grounds for cattle grazing. Some of the most viable dairy product producers were in the Lake Erie Valley and along the Hudson River in the first half of the 19th century.²⁴ Many smaller dairy farms in New England, such as one in Rhode Island with 700 acres and only forty two cows, produced in one year 9,200 pounds of cheese for retail sale.²⁵ The number of dairy farms also grew in Wisconsin and Ohio, whose owners transported their products down the Mississippi River to New Orleans. None, however, could compete with the ever growing and successful dairy farms in New York.²⁶

The success of dairying would not have happened without the dissemination of information around the country. Out of New England grew many farm journals, geared toward the gentry as well as the modest farmer, printed both for local as well as for national audiences starting in the early years of the 19th century. Some of the most widely distributed were the aforementioned *New England Farmer*, as well as *The New York Farmer* begun in 1826, *The Genessee Farmer* started 1831, and *The Maine Farmer* begun in

²³ Percy Bidwell, *History of Agriculture in the Northern United States 1620 - 1860* (Washington: Carnegie Institution of Washington, 1925) 179.

²⁴ Percy Bidwell, *History of Agriculture in the Northern United States 1620 - 1860* (Washington: Carnegie Institution of Washington, 1925) 109.

²⁵ Percy Bidwell, *History of Agriculture in the Northern United States 1620 - 1860* (Washington: Carnegie Institution of Washington, 1925) 109.

²⁶ Percy Bidwell, *History of Agriculture in the Northern United States 1620 - 1860* (Washington: Carnegie Institution of Washington, 1925) 182.

1835. However, one significant agricultural journal, one of the most widely circulated weekly periodicals of all *The Cultivator and Country Gentleman* - commonly called "*The Cultivator*" - went into print in 1834 from New York state, and it catered to all aspects of farming.

The Cultivator had no misgivings about its audience. It was edited by the brightest minds in agriculture, who without a doubt also had deep pockets, and were educated at the best colleges. Weekly articles by Dr. Edward Moore of the Royal College of Veterinary Surgeons in England and Stephen Beale were published discussing the newest ideas and innovations in agriculture. Articles pertaining to the dairying and poultry were found in the "Dairy Department" and the "Poultry Yard."²⁷ The depth of talent in the field of agriculture represented in the journal tends to substantiate the notion that the journal was first and foremost a periodical for the gentlemen farmer.

It would be remiss, however, to say that the journal was purely designed for the enjoyment of the wealthy. *The Cultivator* continually published information also useful for the traditional American farmer. Each edition featured advertisements on the front pages for companies selling farming tools and implements as well as advertising space for individuals who were selling off property or equipment. Ads for farm hands were as common as ads for men looking for other types of work. Unlike the agricultural journals of Britain such as *County Life Illustrated* which sought to showcase the vast landholdings of the

²⁷ *The Cultivator and Country Gentleman*, Vol. LV, No. 1936, 1890.

wealthy gentry in England and the most recent results of fox hunting, *The*

Cultivator strove to be a utilitarian, even educational, document for its readers. It published market prices for dairy products in several cities, including Albany and Boston, printed dates of upcoming agricultural fairs, listed dealings of the various cattle clubs, and accepted written entries of articles about innovations in agriculture for any of its subscribers. Often times discussion of the latest innovations would carry on for weeks at a time between men who otherwise may never have corresponded.

While agricultural periodicals linked large and small farms of all kinds through weekly and monthly publications, leading thinkers in the agricultural science realm began to publish new theories in large volumes. Some of the best known of the 19th century publications were *Moore's Rural New Yorker*, edited by X.A. Williard, MA, *The Farmstead* by Isaac Phillips Roberts, and the two volume *Cyclopedia of Agriculture* edited by John C. Morton.

The publication of large volumes of specialized knowledge was not a new notion of the 19th century, but it was a new institution to the United States. Early volumes of interest for botany, horticulture, agriculture, and farm management were for the most part in Europe and England. For rural concerns, the informal, popular education through reading materials rather than the older oral tradition began to emerge via journals relating to cultivation. The call for more detailed information on improvements for agriculture on the part of the English elite, brought forth more and more scholarship about plants and soon to

follow, animals. Prized as one of the most comprehensive editions pertaining to the subject was John Claudius Loudon's *A Treatise on Forming, Improving, and Managing Country Residences* published in 1806 in two volumes. Such English publications also had an impact on American gentlemen farmers. Entire books as well as portions of volumes of popular English titles were reprinted in America.

Loudon's comprehensive study of the workings of a large estate filtered through to the United States in the following years. By the 1850s Americans saw an abundance of books related to agriculture. Lewis Allen, a prominent name in agricultural circles, published *Rural Architecture* in 1852.²⁸ Allen, like many of his contemporaries, was interested in promoting innovations and new ideas by contrasting them with the "old" ways of doing things. The volume noted issues such as siting farm buildings, "proper" additions, worker housing, and new equipment such as the water ram.²⁹ Allen published the book to showcase the advancements America was making and to encourage more farmers to become involved in progress and agricultural improvement.

It was only two years later that the Rev. John L. Blake published *Home in the Country*. Allen in *Rural Architecture* was speaking more to the working farmer while Blake was speaking to the gentleman farmer. In fact, the introduction notes that the volume was a collection of addresses given at

²⁸ It is interesting to note that many volumes similar to this one by Allen were published out of New York by C.M. Saxton who also published *The American Agriculturalist* as well as Loudon's *Encyclopedia of Agriculture*.

²⁹ Lewis F. Allen, *Rural Architecture* (New York: C.M. Saxton, 1852) 208, 337&c.

societies and colleges by various members of the “honorable vocation” of

farming to be read “in the country rather than in the city” by other educated men of agriculture. The text was interspersed with poems and stories regarding the moral fiber of country life, reminiscent of Thomas Jefferson’s addresses, and applied itself to plain questions such as “What is said of the use of the hoe and cultivator?”³⁰ Queries such as these on practical farming should not be considered out of the way considering most men of letters took up gentlemen farming only as an afterthought, as a way to showcase their civic virtue or their prosperity to other affluent men, and they often needed instruction on the most basic of farming apparatus.

Agricultural Societies

It was not only in agricultural journals that these wealthy new landowners showcased their agricultural interests, however. Early in the 19th century, agricultural societies began to form in New England. Dairy farmers in New York and Massachusetts created among themselves a community of men with similar interests clearly displayed in the agricultural journals of the time. Dairy farming had grown in popularity as a productive undertaking. In the early years of the 19th century as men of considerable influence began to “retire from the city in pursuit of rural occupations and felicity, they did not wish to cease communications they enjoyed with city living.”³¹ In 1807 Elkanah Watson moved

³⁰ Rev. John L Blake, D.D. *Home in the Country* (Auburn, NY: Derby & Miller, 1854) 178.

³¹ Percy Bidwell, *History of Agriculture in the Northern United States 1620 - 1860* (Washington: Carnegie Institution of Washington, 1925) 187.

from the city to Pittsfield, Massachusetts, and within a year created the first

“fair” devoted to agriculture in the area. It became an annual event and eventually became the Berkshire Agricultural Society, one of the earliest societies in the newly formed United States.³²

Societies were in formed Massachusetts, Connecticut, New Hampshire, Vermont, Pennsylvania as well as in New York to name a few. The predominant form of agriculture in New York state was dairying.³³ A group of dairy farmers in that state became known as the New York State Agricultural Society. With the “savvy” of its influential members, many of whom contributed to *The Cultivator* and held large tracts of land, the Society managed to become a quasi-public agency in 1819 when the legislature allotted over \$60,000 to the group over a period of six years, becoming one of the first societies to obtain government funding.

The relationship between the Society and the state government lasted until 1830 when the Society lost its funding.³⁴ It wasn’t until several years later in the 1840’s that the farmers in New York regained their previous standing when many societies reformed due to plunging prices of not only butter and cheese but also of beef, pork, wool, wheat, and many other products. By the 1840’s a major depression in agriculture in the state had taken hold. The state

³² Percy Bidwell, *History of Agriculture in the Northern United States 1620 - 1860* (Washington: Carnegie Institution of Washington, 1925) 187.

³³ John H. Thompson, editor, *Geography of New York State* (New York: Syracuse University Press, 1966) 432 & 433.

³⁴ Percy Bidwell, *History of Agriculture in the Northern United States 1620 - 1860* (Washington: Carnegie Institution of Washington, 1925) 190.

government looked to the Agricultural Society for guidance with the falling market prices.³⁵

The New York State Agricultural Society began to hold its meetings in Albany, the state capital, while the legislature was in session and the presence of so many farmers in the capital, no doubt, impacted the distribution of state monies in their favor.³⁶ Albany began to become a center of agricultural importance. Not only was it the state capital and headquarters of the agricultural society but it was also the center of the State Geological Survey, the State Library and Educational Center, and the host of the American Association for the Advancement of Science in the 1850's.³⁷ The success of the New York State Agricultural Society added credibility to experimental farming in America, and the vast majority of information about agricultural science had some connection with New York.

Agricultural societies set the stage for the advancement of agricultural science in America. The journals and books published in the 19th century spoke to the gentleman as well as the traditional farmer of the advancements in the cultivation of crops and livestock. Up until 1862, the majority of the interest in agriculture was privately pursued and funded. The United States government had little active interest in the agricultural pursuits of its citizens

³⁵ Margaret W. Rossiter, *The Emergence of Agricultural Science* (New Haven: Yale University Press, 1975) 7.

³⁶ Percy Bidwell, *History of Agriculture in the Northern United States 1620 - 1860* (Washington: Carnegie Institution of Washington, 1925) 194.

³⁷ Margaret W. Rossiter, *The Emergence of Agricultural Science* (New Haven: Yale University Press, 1975) 8.

until President Lincoln signed into law the creation of the United States

Department of Agriculture.³⁸ The government became involved in the national development of agricultural pursuits and education and the fields of agricultural science took root as a true field of research.

Agricultural Science and Universities

The fields of research devoted to studying the land as a resource became known as agricultural science. Since the early days of this field it was known as an applied science, meaning traditional sciences such as chemistry and physiology were applied to practical experiments that could result in new information for the advancement of agriculture. By the 1840s much of the information relating to that end came from Europe. Justus Liebig published *Organic Chemistry in Its Applications to Agriculture and Physiology* in 1840 in England and Germany.³⁹ It became available in the United States and was quickly issued in two editions by Professor John Webster of Harvard College. It appeared that the association of this emerging science with educated gentlemen gave the subject immediate good standing in academic circles, even the American Journal of Science reviewed the volume.⁴⁰

From the outset, however, the new field of study of agricultural science had many hurdles to overcome. The most important being the lack of interest of

³⁸ Wayne D. Rasmussen and Gladys L. Baker, *The Department of Agriculture* (New York: Praeger Publishers, 1972) vii.

³⁹ Margaret W. Rossiter, *The Emergence of Agricultural Science* (New Haven: Yale University Press, 1975) 10.

⁴⁰ Margaret W. Rossiter, *The Emergence of Agricultural Science* (New Haven: Yale University Press, 1975) 10.

yeoman farmers in the research of science. Volumes such as Liebig's were difficult to follow because of their academic writing style, as the work was written more for other scientists than for farmers. The book failed to provide practical terms for the farmer to follow, instead, Liebig chose to use chemical terms alien to the less educated. Men of the wealthy and educated sort did take an interest in the new scholarship. This renewed interest in experimental agriculture led to discussions in *The Cultivator* in the 1840s about the experiments discussed in Liebig's book.⁴¹ Editorials about experiments with manures were found often in the pages of the journal as this was a topic many dairy farmers in New York and New England were most interested in learning about. The journals tried to fill the gap between the scientist and farmer by giving exact measurements of additives to manure. *The Cultivator* encouraged the farmers to experiment on their own farms and report back to the periodical with the results. Despite chances the farmer took by breaking with tried farming methods many did go ahead with the experiments, often failing to receive the same results discussed in editorials by learned writers. The inability to receive similar results, the scientists claimed they had obtained, created a rift or a bias of anti-intellectualism between the two classes of farmers.⁴²

⁴¹ Margaret W. Rossiter, *The Emergence of Agricultural Science* (New Haven: Yale University Press, 1975) 10. Perhaps the renewed interest in experimental farming in the 1840s is a result of the basic lack of education of the yeoman farmer in America giving the wealthy an opportunity to maintain their elite status through education. The answer is beyond the scope of this thesis, but is none the less an intriguing consideration.

⁴² Margaret W. Rossiter, *The Emergence of Agricultural Science* (New Haven: Yale University Press, 1975) 36.

It was hoped that by the introduction of schools of study for agricultural science in America by academics already interested in the applications of their science on the subject, the rift between the two types of farmers would grow smaller. Ideally, the sons of farmers of all economic class levels would join together at institutions of learning to better the farming community of the United States. It was a lofty goal and, in the end, did not occur. Instead, wealthy men who already owned large estates and had been actively experimenting on their own farms sent their sons to learn and the less fortunate farmers sons remained on the land. Without the resources to travel and live in cities where courses of study were offered, the struggling farmers were yet again excluded from the benefits of the new developments. Meanwhile, the wealthy took advantage of the situation and attended when they could and since then considered themselves stewards of information they would pass along to the masses.⁴³

The introduction of agricultural science to academic institutions was a struggle to fund. The gentlemen farmers were always aware of the British accomplishments on the great estates of the English countryside and actively sought to emulate the grandeur of such lands. The government in Britain showed their interest in agriculture in 1793 by creating the English Board of Agriculture.⁴⁴ This was clearly defined by an editor of the *Gennesse Farmer* who lobbied the New York State Congress to set aside funds for an agricultural

⁴³ Journals of agricultural societies which had many members educated at places of higher learning clearly state that their mission as a society was to experiment for the progress of agriculture on the large scale because they had the resources and abilities to do so.

college as a result of the European agricultural community noting the inferiority of American agricultural chemists.⁴⁵ The effort to establish a school devoted to agricultural pursuits failed until the 1860s.

Massachusetts' agrarian followers rebounding from the lack of interest in applied sciences to the creation of the School of Practical and Theoretical Science in 1847 funded by a wealthy Bostonian, Abbott Lawrence, at Harvard College.⁴⁶ Books, journals, and chemicals were imported from Europe because these necessities were not available in America. It was at this time that the first glimmer of interest from the federal government was seen by the appropriation of money to the United States Patent Office for the "collection of agricultural statistics" and other agricultural implements for agricultural purposes.⁴⁷ Despite the interest of the established gentlemen farmers from the Boston area, class size was small and only fueled the fire between the two economic classes of farmers. Yale College in Connecticut watched what was happening in Cambridge and scrambled to retain funding for a similar school in Hartford. After lobbying the Connecticut State Legislature and failing to obtain funding,

⁴⁴ Wayne D. Rasmussen and Gladys L. Baker, *The Department of Agriculture* (New York: Praeger Publishers, 1972)4.

⁴⁵ *The Cultivator and Country Gentleman* (Albany, 1844)137-9. The issue is discussed in the article.

⁴⁶ Margaret W. Rossiter, *The Emergence of Agricultural Science* (New Haven: Yale University Press, 1975)73 & 75.

⁴⁷ Wayne D. Rasmussen and Gladys L. Baker, *The Department of Agriculture* (New York: Praeger Publishers, 1972)5.

Yale managed to gather enough money from private donors to begin a

laboratory which devoted much of its time and resources to the analysis of soil.⁴⁸

The high visibility of this new science at elite colleges brought about new discussion within the pages of agricultural journals in America. Columns debating the authenticity of the testing procedures in the academic laboratories were rampant, and lecturers at many functions claimed the results were false and were fabricated by charlatons.⁴⁹ Private laboratories sprang up through the Northeast and new books defining the scientific and chemical terminology in common English terms were published. *Home in the Country* was published in 1854 admitting that the scientific jargon was alienating the very community it strove to uplift.⁵⁰ Blake wrote that by learning to interpret a few simple terms everyone could participate in the advancement of agricultural science, "So it is possible to be a very good agricultural chemist without knowing much beyond the names of a very few substances."⁵¹ This theory prevailed for a few more years and results of experiments were still forwarded to journals such as *The Cultivator*, but conflicting results due to differing regional weather, soil types, terrain, and many other variables hindered the advancement of experimental farming among those relying upon the year's crop to survive. Once again

⁴⁸ Margaret W. Rossiter, *The Emergence of Agricultural Science* (New Haven: Yale University Press, 1975)115.

⁴⁹ Margaret W. Rossiter, *The Emergence of Agricultural Science* (New Haven: Yale University Press, 1975)115.

⁵⁰ Rev. John L. Blake, D.D. *Home in the Country* (Auburn, NY: Derby & Miller, 1854)7. Although today we may consider it a condescending tone, Blake writes, "It is not a condescending effort of the high [meaning himself] to exalt the low [meaning the common farmer], nor of the peculiarly cultivated to elevate and benefit the less refined and privileged of men."

agricultural improvements fell to the gentleman farmer whose monetary resources allowed them to continue the efforts without losing their farm.

In the 1860s half the population of America lived on farms. The federal government finally acknowledged the interest in agricultural science and established the United States Department of Agriculture in 1862 to collect and distribute useful information on subjects connected to agriculture.⁵² Perhaps the nature of the early years of the 1860s and the agriculture economy of the South prompted President Lincoln to create such a department which he called, "precisely the people's department, in which they feel more directly concerned than any other."⁵³ Once the federal government became involved in the movement of experimental agriculture, credibility of the science resurfaced.

One of the fundamental efforts of the Department of Agriculture in its inaugural year was the passage of the Morrill Land Grant College Act.⁵⁴ No longer was the subject of agricultural science available for the few who could afford to attend expensive colleges. Now state land had been set aside for the establishment and support of courses in agriculture at the state level. To further expand the knowledge and experiments at these colleges and throughout the

⁵¹ Rev. John L. Blake, D.D. *Home in the Country* (Auburn, NY: Derby & Miller, 1854)17.

⁵² Wayne D. Rasmussen and Gladys L. Baker, *The Department of Agriculture* (New York: Praeger Publishers, 1972)viii.

⁵³ Wayne D. Rasmussen and Gladys L. Baker, *The Department of Agriculture* (New York: Praeger Publishers, 1972)vii.

⁵⁴ Wayne D. Rasmussen and Gladys L. Baker, *The Department of Agriculture* (New York: Praeger Publishers, 1972)9. The Morrill Land Grant College Act was passed in 1862. Federal lands were given to states in which the state would in turn sell the land and the profits would benefit the courses in agriculture at a state college.

country, a research bulletin was produced beginning in 1862.⁵⁵ With this

renewed emphasis on the agricultural development of America experimental farming, research, science, education, and prosperity grew.

During the second half of the 19th century a proliferation of new farming implements, practices, and ideas were created. Many of these advancements were products of the continued experiments of gentlemen farmers as well as the newly established United States Experiment Stations, but very often it was the combination of both working in conjunction with one another that produced the best results. Unlike the first half of the century, the recently divided country now pushed forward and considered many of the advancements offered. The manufacturing progress of the burgeoning industrial revolution offered up plenty of funds to keep the ideas forthcoming. This was especially true for the newly rich manufacturing moguls of the North who had the interest, the land, and the money to hire the very men who had made the breakthroughs in agricultural science to work their own experimental farms.

⁵⁵ Wayne D. Rasmussen and Gladys L. Baker, *The Department of Agriculture* (New York: Praeger Publishers, 1972)1. The USDA has published the bulletin continuously since 1862.

Chapter Two: Edward Burnett, the making of a professional man

*"Some years ago I had the pleasure of meeting a young person who was then called "The boy farmer of Deerfoot." He went under that name, in pursuit of his favorite occupation of a farmer."
Mr.Appleton at the New York Farmers*

From St. Mark's to Harvard

Edward Burnett was born on March 16, 1849.⁵⁶ Joseph Burnett, Edward's father, was born in Southville, Massachusetts about 35 miles west of Boston, later to be incorporated as Southborough, in 1820. He was educated at local schools and at the age of fifteen left for Worcester, Massachusetts to continue his studies. After several years of medical training, Burnett left academia to pursue a career in Boston working as a clerk in a chemist's laboratory in 1837.⁵⁷ After successfully rising to become a partner in that firm, Joseph stepped forth into his own enterprise on Central Street in Boston becoming the first person to extract successfully the oil from vanilla beans. This feat must have catapulted his personal finances to a new unforeseen level. It was at this point that Joseph Burnett was capable of purchasing large tracts of land in his native Southborough and to retire there as a gentleman.

⁵⁶ Albert Emerson Benson, *History of Saint Mark's School* (Southborough, MA: Alumni Association, 1925)9 Josephine was the daughter of Edward and Ruth Cutter of Boston.

⁵⁷ Albert Emerson Benson, *History of Saint Mark's School* (Southborough, MA: Alumni Association, 1925)9

In 1847, Joseph and Josephine Burnett married and spent the following year abroad.⁵⁸ Their first child, Edward, was born on March 16, 1849, upon the couple's return to the United States. That same year they began construction of their stone mansion built in the rolling countryside of Southborough. It was completed in 1850, and their estate was named Deerfoot.⁵⁹ Joseph's tremendous success in liquid vanilla production allowed his family to live comfortably in Southborough and for him to enter into agricultural pursuits on his estate. Joseph and his wife had a total of eleven children, six boys and five girls, while living at their Southborough country seat.⁶⁰

The Burnett family had a significant impact on the town of Southborough as well as on the state of Massachusetts. Like many wealthy landowners in Massachusetts, the Burnett family used its position to better themselves through private philanthropy. Years before Edward's birth, Joseph had become involved in the Episcopal Church in Boston. He donated funds to bring the Church to Southborough and served as a vestryman in Framingham and Hopkinton, two towns located near Southborough, and he was one of the benefactors of the Church of the Advent in Boston.⁶¹ His son Waldo went to

⁵⁸ Nick Noble Presentation to Southborough Historical Society (Video Recording).

⁵⁹ Nick Noble, Presentation to the Southborough Historical Society (Video Recording). Burnett family lore held that Edward was responsible for naming Deerfoot farm after finding a petrified deer footprint on the grounds in 1847, however, Edward had not yet been born. It is probable that with the subsequent accomplishments in agriculture by Edward, a story of the early years at Deerfoot Farm was elaborated upon.

⁶⁰ NYSDEC files. Santanoni Document Collection. Letter from John Burnett Vaughan (JBV). The children in order of birth are Edward, Robert, Harry, Josephine, Esther, Ruth, Waldo, Louise, Charlie, John, and Elinor.

⁶¹ Albert Emerson Benson, *History of Saint Mark's School* (Southborough, MA: Alumni Association, 1925)10.

England to study at Oxford and later became a minister and served at the

Episcopal Church in Southborough, while his sixth child and second daughter, Ruth served with the church for her entire life.⁶² It is clear from the career choices of these two Burnett children, that religion was a key part of the entire family's life.

The influence of Joseph's views greatly impacted on the children in the family and, especially, on his oldest child. Edward Burnett was the eldest child in the family and in 1861 was sent to the first church school in New England, the prestigious St. Paul's School in Concord, New Hampshire, to begin his formal education at age thirteen.⁶³ It was only a few years later when Edward's brother was enrolled as a student at St. Paul's that the Headmaster suggested to his father, Joseph, that since he had several more boys coming of school age that he begin his own school.⁶⁴ Joseph's hometown of Southborough was as fitting a place as any to become a place of learning, and in 1865 St. Mark's School was opened (see Fig. 2.1).⁶⁵

⁶² NYSDEC files. Santanoni Document Collection. Family information from John Burnett Vaughan.

⁶³ Albert Emerson Benson, *History of Saint Mark's School* (Southborough, MA: Alumni Association, 1925)11.

⁶⁴ Albert Emerson Benson, *History of Saint Mark's School* (Southborough, MA: Alumni Association, 1925)11. Dr. Coit, the St. Paul's Headmaster, started his school for the same reason.

⁶⁵ Albert Emerson Benson, *History of Saint Mark's School* (Southborough, MA: Alumni Association, 1925)29. The school was officially opened September 13, 1865.



Fig.2.1 Original St. Mark's School Building, Southborough, MA

Edward was called home from St. Paul's to attend the newest church school in New England a year later.⁶⁶ Edward had an exceptional education at both schools with a healthy dose of religious teachings. Much like other schools of the time, a proper and healthful education was seen as being of utmost importance and St. Mark's was a place "singularly free from objectionable features."⁶⁷

School life at St. Mark's for the young Edward was intricately linked to his father's life. While the Presidency of the School was reserved for Episcopal clergymen of Boston, Joseph Burnett was an original Trustee as well as the Treasurer since the incorporation of the school on March 28, 1865, until his death in 1894.⁶⁸ Edward and his classmates (with well known Boston surnames like Abbott, Abercrombie, Howe, and Russell) were invited up to the family

⁶⁶ *Catalogue of the Officers and Alumni and Scholars of Saint Mark's School 1865-1901* (Boston: Mills and Knight Company, 1901)18.

⁶⁷ Albert Emerson Benson, *History of Saint Mark's School* (Southborough, MA: Alumni Association, 1925)11. This was quoted from the St. Mark's School Catalogue.

⁶⁸ *Catalogue of the Officers and Alumni and Scholars of Saint Mark's School 1865-1901* (Boston: Mills and Knight Company, 1901)5 & 7.

mansion regularly by Joseph and his wife. The boys took advantage of the scenery in Southborough, one story related by two members of the early classes of the school included a bathing hole on the Burnett estate that many boys enjoyed going to on hot September days.⁶⁹ The school quickly became a success pulling in students from not only Boston and Lowell, Massachusetts, but from as far away as Washington, D.C., New York, New Hampshire, and Florida. Many of the boys ended up attending Harvard and Williams College almost immediately upon graduation⁷⁰

Edward was admitted to Harvard College in 1867 after spending his final high school year at St. Mark's (see Fig. 2.2).



Fig. 2.2 Edward Burnett at Harvard College c.1871

⁶⁹ Albert Emerson Benson, *History of Saint Mark's School* (Southborough, MA: Alumni Association, 1925)41.

⁷⁰ *Catalogue of the Officers and Alumni and Scholars of Saint Mark's School 1865-1901* (Boston: Mills and Knight Company, 1901)

Edward enrolled in Greek, French, and Latin during his time at Harvard. In addition he studied the sciences, including Chemistry, Physics, Botany, and Optics. To round out his education Edward also had courses in Mathematics, English, and Philosophy during his college career in Cambridge. Edward found time for play and like many young students his age, away from the watchful eye of parents, he rebelled.

Far from the restrictions pressed upon him as the firstborn son of the founder of a church school, Edward played pranks while away at school and, in 1869, he was admonished for spraying a Freshman with water. It seems that his actions did not stop at hazing freshmen, in fact, he was scolded several times for defacing University seats in an auditorium. His neglect of several of his classes forced many professors to issue ultimatums if he did not improve. He was required to repeat several classes when he did not pass them satisfactorily the first time. Unlike his younger brother Waldo who had a calling from God, Edward was frequently reprimanded for being late or failing to appear in church and prayers and, at one time, signing a petition for Sunday afternoon services to be optional. Although he was admonished for disorderly grouping and smoking in the college yard and even had his parents called for his lack of performance in some classes, he successfully completed requirements for graduation and received his Bachelor of Arts in 1871.⁷¹

⁷¹ Harvard University Archives, Index of University Records (Cambridge, MA).

The Educated Gentleman Farmer

Upon his graduation from Harvard, Edward returned to Southborough and took over the direction of the family estate. Two years before Edward was born, Joseph Burnett created Deerfoot Farm as part of the country estate. Like many wealthy gentlemen of the 19th century, Joseph created a country seat complete with a working farm. The estate consisted of five hundred acres on land in Southborough off the Boston Turnpike.⁷² In addition to his duties at St. Mark's Joseph Burnett was the Chief Executive of Deerfoot Farm and a member of the Middlesex Agricultural Society. He once boasted about the pears he had grown on his property at one of the meetings.⁷³ Joseph fit nicely into the agricultural circles of the Massachusetts area with other gentlemen cultivating their estates. It was not until Edward took over leadership, however, that the agricultural portion of the estate became more than a gentleman's model farm.

When Edward completed his education, he wasted no time returning to the countryside which he seemed to enjoy more than city life. As the eldest son in the Burnett family, Edward would have had considerable pressure upon him to succeed. He distinguished the family by attending both St. Paul's, St. Mark's, and Harvard and his pursuits after his education would have had to have been equally substantial. Edward spent the first thirteen years of his life in Southborough and returned there after completing his education to pursue an

⁷² Nick Noble Presentation to the Southborough Historical Society. Also, the Boston Turnpike is now known as Route 9.

⁷³ Nick Noble Presentation to the Southborough Historical Society.

appropriate occupation for his station in the Burnett family. While at Harvard he studied the sciences and was exposed to the newly formed school devoted to agricultural sciences. Despite a somewhat unruly time at Harvard, he learned his lessons and put them to work immediately upon return to his family's estate after he married Mabel Lowell Russell on April 3, 1872.⁷⁴

For the twenty years following the return of Edward to Deerfoot Farm it was the single largest employer in the area, employing over 500 people. The farm's major departments included the Dairy and the Sausage Factory.⁷⁵ The primary animals for such pursuits were cattle and pigs. Facilities for both were constructed and acres of pasture land were cleared for grazing. Little information is known of the operations of the Sausage Factory (see Fig. 2.3).



Fig. 2.3 Deerfoot Farm Sausage Factory

However, Edward did believe that allowing pigs to be free rangers and grazers produced a bony animal and in the end a poor product. It was better to keep a

⁷⁴ NYSDEC. Santanoni Document Collection. Letter from JBV regarding family history.

⁷⁵ Nick Noble Presentation to the Southborough Historical Society.

watchful eye over the swine with great care and attention, and when the farmer could afford it, keep a herd of the finest thoroughbreds.⁷⁶ The steam powered facility slaughtered about 1,500 pigs a year most weighing one hundred and seventy five pounds. It contained pig pens, a slaughter room, and packaging rooms. The Factory produced neatly wrapped packages of “Deerfoot bacon,” “Deerfoot jowls,” “Deerfoot pigs’ feet,” “Deerfoot lard,” and, of course, “Deerfoot sausages.”⁷⁷

While the Deerfoot Sausage Factory was busy producing pork products for the Boston markets, the Dairy became the center of Burnett’s future endeavors (see Fig. 2.4).

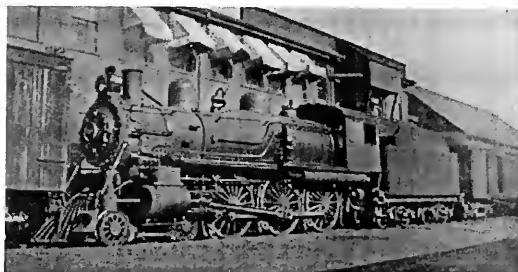


Fig. 2.4 Deerfoot Dairy & Milk Train

He ran the Deerfoot Dairy as a “Factory.” The increased knowledge and innovation of the 19th century and the formation of agricultural societies brought about the Factory System in dairy production.⁷⁸ Primarily the Factory System

⁷⁶ Edward Burnett. *New York Farmers*, January 17, 1905.

⁷⁷ *Annual Report of the Committee of Agriculture for the Year 1880*, “United States Department of Agriculture Report 1880” (Washington, D.C.:Government Printing Office, 1881)629.

⁷⁸ J.P. Sheldon, *Dairy Farming* (New York: Cassell, Petter, Galpin & Co., 1883-5)465. The Factory System grew out of Rome, New York in Oneida County in 1851 at Jesse Williams farm.

consisted of the gathering of milk from numerous dairy farms to a single building for the production of butter and cheese. Although the first actual factory was in Rome, New York, farmers used a similar system in small communities. In areas where the demand for cheese was great and where the increase in production was stimulated to take advantage of the high prices, individual farmers found themselves unable to keep up with the demand. Consequently, a group of farmers began by renting their cows to increase production at large farms. The idea took off throughout the dairy community in America with one farm in full production gathering whole milk from individual local dairymen while the cattle grazed in home pastures and were milked by their owners.⁷⁹

The story of the American Factory System goes back to the Revolutionary War. After the victory against the English, as payment to soldiers and officers “Bounty Lands” were offered, in plots of six hundred acres and up in the western areas of New York and Pennsylvania. Many farmers began by grain cropping but with the “worn out soil” syndrome, eventually farmers decided to recuperate the loss of income from reduced grain crops by dairying. After years of struggling alone on dairy farms, the dairymen joined forces with neighboring farmers pooled their cattle resources and by 1851 started the first Associated Dairy in America.⁸⁰

The Factory System in dairying was a success. Due to the increased demand of cheese overseas and the high quality of product coming out of New

⁷⁹ J.P. Sheldon, *Dairy Farming* (New York: Cassell, Petter, Galpin & Co., 1883-5)465.

York, the Factory was emulated throughout the counties and spread to neighboring states. By 1861 there were at least forty cooperative dairies in operation throughout the state of New York. The increased number of working dairies in the United States prompted the incorporation of the first nationally recognized society, the American Dairymen's Association, an organization that was active in voicing the benefits of the Factory System throughout the United States.⁸¹

There were three basic methods to work the Factory System. The strictly cooperative system was much like the colonial institution of "the common." Cows were grazed on common property owned by the farmers in the area who formed the cooperative. The cattle owners handled the work of milking cows and producing the cheese and were overseen by a committee of patrons associated with the factory. The second system was known as associated dairying. In addition to the dairymen providing the milk for the production of dairy products, stocks were sold with the guarantee of a return, to raise capital for the property, buildings, equipment, and operating expenses. The third method minimized the input of the dairyman to simply being the supplier of milk to a Factory at a fixed price. Run under a Board of Directors by a Factory Manager, the system called for the institution of an employed business manager and laborers paid on salary.⁸²

⁸⁰ J.P. Sheldon, *Dairy Farming* (New York: Cassell, Petter, Galpin & Co., 1883-5)467.

⁸¹ J.P. Sheldon, *Dairy Farming* (New York: Cassell, Petter, Galpin & Co., 1883-5)468.

⁸² J.P. Sheldon, *Dairy Farming* (New York: Cassell, Petter, Galpin & Co., 1883-5)469.

The Deerfoot Dairy was run by the third method of the Factory System.

This system was introduced to the world at the Centennial Exhibition of 1876. It was highly probable that the Burnett family, including Edward, witnessed the running of the Model Butter and Cheese Factory on the Centennial Grounds in Philadelphia. The Burnett family was absent from Southborough for two years beginning in 1875.⁸³ In addition, a trade card from the Exhibition for Joseph Burnett's Vanilla Extract was distributed in the Main Exhibition Hall.⁸⁴ The Exhibition drew great crowds of people, both rich and poor, to the grounds. Edward may have witnessed the exhibits at the Agricultural Building, the livestock shows as well as the Model Factory while visiting the Exhibition.

When the family returned to a hearty welcome by the town of Southborough and the students and faculty of St. Mark's in the Spring of 1877, they invited the community to their mansion to celebrate their travels.⁸⁵ Edward would have returned with the knowledge of what his counterparts in the rest of the country were doing at their dairies. However, even if the Burnett family did not attend the festivities of the Centennial Exhibition, Edward would have been well briefed on the Factory System's benefits. There were articles written in agricultural journals and literature of the time, and most likely, would have been discussed at the meetings of the Middlesex Agricultural Society of which Joseph was a member. It is not clear if Edward was a member, although it is a

⁸³ Albert Emerson Benson, *History of Saint Mark's School*. (Southborough: Alumni Association, 1925)99.

⁸⁴ Library Company of Philadelphia, Centennial Trade Card Collection.

great probability, but he was a member and one time president of the Bay State Agricultural Society.⁸⁶

Burnett handled over three tons of milk a day at the Deerfoot Dairy.⁸⁷ In February of 1879, Mr. Weston of Boston, the inventor of the first Centrifugal machine to separate liquids of differing specific gravities, asked Burnett to do some experiments with his machine at his dairy in Southborough (see Fig. 2.5).

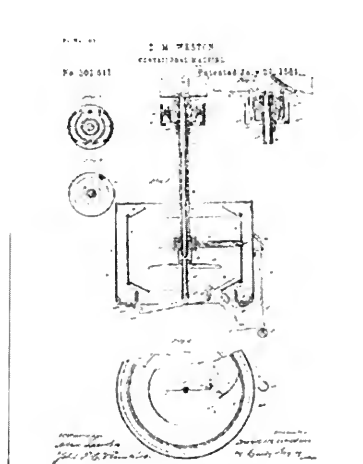


Fig. 2.5 Weston Patent for Centrifugal Machine

Edward was interested in the idea of increased production and invited Mr. Weston to bring his machine to his farm. Burnett began separating the milk from the cream in this new contraption at four hundred pounds a day. Weston and

⁸⁵ Albert Emerson Benson, *History of Saint Mark's School*. (Southborough: Alumni Association, 1925)69.

⁸⁶ Harvard University Archives, File on Edward Burnett. Obituary from Boston Transcript.

⁸⁷ Edward Burnett, *New York Farmers*, Dec. 18, 1882, 6.

he made some modifications after a series of tests and by 1882 handled over 6000 pounds of milk a day.

The Centrifugal Machine was based on the concept that the specific gravity of fluids will separate when exposed to the centripetal force. Whole milk, directly from the cow, would be poured into the machine. The machine would be turned on and the "basket" or tub holding the milk would spin around a stationary rod. Due to the differing specific gravity of the milk and the cream, the cream would separate from the milk and would be drained from the outside of the basket.⁸⁸ The traditional method of separation consisted of pan setting. This method simply required setting milk in large pans over a chilled surface and waiting for the cream to rise to the top of the milk and be scraped off. The benefits of the centrifugal machine was predominately one of time. Pan setting took hours of time and a lot of space while the centrifugal machine was quicker and space saving.

To Edward Burnett, however, the machine was something even more. While Burnett was considered a gentlemen, he did not lead a life of leisure. Burnett was interested in producing a useful product while making a profit, a way of life he probably learned from his father. Prior to the introduction of the Centrifugal Machine onto the Deerfoot Farm, Burnett ran his Dairy as a Factory and used the pan method of cream separation, and most likely he used only his own cattle herd. The amount of time and space involved in setting cream would

⁸⁸ United States Patents, (Washington, D.C.: United States Patent Office) Patent No. 302,611.

have been extreme if he had purchased 6000 pounds of milk from his neighboring dairymen.

The new machine would have required Edward to expand the dairy by the introduction of a steam engine to power the machine as well as a three ton granite block base on which the separator rested. In addition, Edward would need more milk to make Deerfoot a profitable venture and not just the experimental farm his father had laid out. He began purchasing whole milk from local dairymen and the Deerfoot Factory was begun. The milk was packed in quart containers while the cream was extracted from the machine and stored in pint bottles. The cream was distributed by horse and wagon to the city and distributed at certain markets. The forty quart milk containers were loaded in refrigerator cars and shipped to Boston twice a night arriving at two thirty and ten thirty in the morning when it was sold to customers.⁸⁹

The location of the refrigerated railroad cars to the dairy allowed for quick delivery of fresh products to the Boston markets. Edward's best market for his milk was in South Boston. He did set up his own stores in the Boston area to sell his products. Signs hung in Boston store windows stating, "Pure Deerfoot farm skim-milk - 3 cents a quart - at retail."⁹⁰ Burnett also paid several men to distribute milk to families in Boston at two cents a quart. Local doctors in Boston claimed that Deerfoot milk was highly beneficial to their patients and especially

⁸⁹ Edward Burnett, *New York Farmers*, December 18, 1882, 6.

⁹⁰ Edward Burnett, *New York Farmers*, December 18, 1882, 9.

children because it was lower in fat, known as "skim milk," a condition which came about as a result of the Centrifugal Machine method of separation.⁹¹

In addition to skim milk and cream, Burnett also made butter. Butter was produced in the dairy the day after the cream was separated in the centrifugal machine. Edward let the cream from the whole milk ripen twenty four hours. He believed that the cream should mature and develop an appropriate acidity before being churned into butter. Burnett did concede that the centrifugal process took away something from the cream when it was separated, thereby creating a less attractive butter but it was still "desirable and so much sought after by connoisseurs."⁹² Burnett sold from one hundred to one hundred and fifty pounds of butter a day at fifty cents a pound in the winter and forty cents a pound in the summer season.⁹³

Recognition and Public Life

The new improved Deerfoot Dairy became a center of interest in America. In 1880 the United States Agricultural Department published an article in the *United States Agricultural Department Records* about the dairy. The article entitled "Deerfoot Farm Centrifugal Dairy" was written by Edward Burnett's long time friend E. Lewis Sturtevant, M.D. of Framingham, Massachusetts, with segments interjected by Edward about the farm. Sturtevant opened his article by claiming Edward Burnett's property was "real fancy

⁹¹ Edward Burnett, *New York Farmers*, December 18, 1882, 12.

⁹² Edward Burnett, *New York Farmers*, December 18, 1882, 8.

⁹³ Edward Burnett, *New York Farmers*, December 18, 1882, 8.

farming,” with the “use of intensive conditions, the employment of abundance of labor, and the availing practically of every new idea adapted to the conditions that promise improved profits.”⁹⁴ This report was distributed to farmers throughout the United States.

Sturtevant called attention to experiments he and Burnett had done on the fat content of the butter and cheese at Deerfoot farm and the results of tests they administered on cream taken from the centrifugal machine. He also noted the great importance Edward put on the dairy herd. With three hundred acres of land available for grazing, Burnett had a large herd of Jersey cattle imported from England for use on his farm. Burnett paid great attentions to his herd as he believed that the care of the animals was more important than all other measures to procure a high quality product. The second most important issue, however, was the cleanliness of the dairy building itself.⁹⁵ These two factors are seen in all the designs and work Edward Burnett contributed to in his later life.

After the publication in the United States Agricultural Reports, England became interested in the works of the man one person called “the boy farmer from Deerfoot.”⁹⁶ In fact the Royal Agricultural Society of England published an abridged version of the article “Deerfoot Farm Centrifugal Dairy” in its *Journal*

⁹⁴ *Annual Report of the Committee of Agriculture for the Year 1880*, “United States Department of Agriculture Report 1880” (Washington, D.C.:Government Printing Office, 1881)629.

⁹⁵ *Annual Report of the Committee of Agriculture for the Year 1880*, “United States Department of Agriculture Report 1880” (Washington, D.C.:Government Printing Office, 1881)637-638.

⁹⁶ Edward Burnett, *New York Farmers*, December 18, 1882, 8.

of the Royal Agricultural Society in 1881.⁹⁷ Although there are no additional comments by member of the Royal Society, it appears that Burnett was invited to attend the Royal Exhibition at Derby in 1881.⁹⁸ He had been exporting cattle from England for years, both for himself and other dairymen around New England, and most likely had friends and business associates who were members of the Society.

Upon his return to the United States, Edward Burnett continued to run Deerfoot Farm with a watchful eye on all matters. His business expanded to producing "gilt-edged butter and cream, family milk, skim milk, and buttermilk."⁹⁹ The large amount of product shipped from the Farm required new innovations to maintain a high level of quality. In 1883 Burnett patented two new inventions to help himself and other farmers deliver milk safely to market. Burnett was granted a patent for a "Stopper for Liquid Containing Vessels" with Alexander P. Browne of Boston in July of 1883 (see Fig. 2.6).

⁹⁷ *Journal of the Royal Agricultural Society of England*, second series, vol. 18, (London: John Murray, 1882).

⁹⁸ Edward Burnett, *New York Farmers*, December 18, 1882, 9.

⁹⁹ *Annual Report of the Committee of Agriculture for the Year 1880*, "United States Department of Agriculture Report 1880" (Washington, D.C.:Government Printing Office, 1881)629.

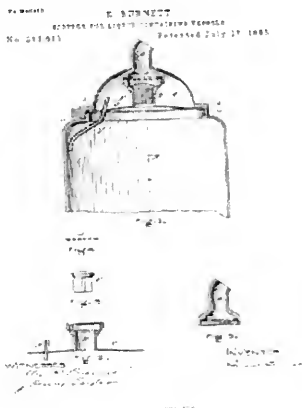


Fig. 2.6 Burnett Patent for Stopper for Liquid Containing Vessels

The stopper was developed to slow down or prevent the adulteration of milk on its way to market. It also had the added benefit of closing itself by gravity when the can was set right after being inverted for pouring.¹⁰⁰ The second patent was granted the same month. This “Truck” was probably created out of need to transport his own products to market by his own men (see Fig. 2.7).

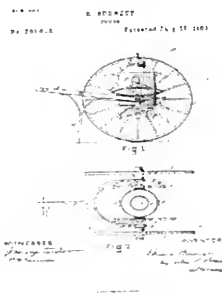


Fig. 2.7 Burnett Patent for “Truck”

¹⁰⁰ United States Patents (Washington, D.C.: United States Patent Office) Patent No. 281,611.

The Truck was ingenious in two ways. First, it held the large milk can on springs. During transport the milk inside would not be stirred up when jostled on a rocky road. Secondly, the Truck took advantage of the new liquid stopper he had invented by allowing the can to be tipped and milk poured without being taken out of the truck. This process saved the milk from contamination and saved the delivery man time and energy.¹⁰¹

Edward Burnett was also given credit in two patents by Alexander P. Browne. The first was a “Fastener for Stoppers of Milk Cans, &c.” in July 1883 (see Fig. 2.8).

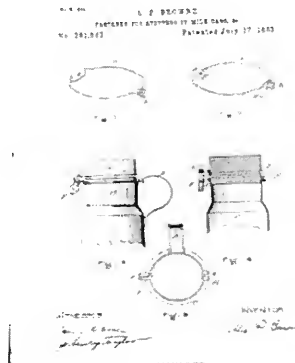


Fig. 2.8 Browne/ Burnett Patent for Fastener for Stoppers of Milk Cans

A thin metal ring, fastened through the stopper of a milk can, was designed to lock itself to the can lip or to the can handle depending on which model of can

¹⁰¹ United States Patents (Washington, D.C.: United States Patent Office) Patent No. 281,612.

the farmer used for transport.¹⁰² Perhaps the two found that during transport to Boston, milk stoppers frequently came off and to remedy this situation they created these products together. The second invention was a “Lock-Stopper for Milk Cans (see Fig. 2.9).”

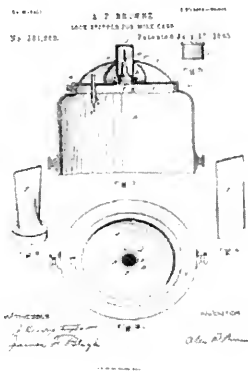


Fig. 2.9 Browne/Burnett Patent for Lock-Stopper for Milk Cans

The idea was similar to the stopper Edward patented, but this stopper had an added benefit of not opening even when the milk can was inverted except when the air pressure was changed.¹⁰³ This Lock-Stopper was probably used more often during longer journeys to market, and the Stopper for Liquid was most likely used for daily milk delivery.

Burnett continued to work on his Deerfoot Farm as the proprietor producing milk products and having various members of the agricultural community visit the famous farm. In 1885 J.P. Sheldon of England published an

¹⁰² United States Patents (Washington, D.C.: United States Patent Office) Patent No. 281, 607.

article in his book after visiting Deerfoot. He noted in the chapter "American Systems of Dairy Feeding" Burnett's cow stables and methods of feeding and sheltering the animals. He also noted the method by which Burnett acquired milk from his own herd of Jersey cattle and that of his surrounding dairy farmers. The centrifugal machine still remained the center of interest at Deerfoot Farm, but the management of the farm and the care that was taken in keeping the entire dairy scrupulously clean was noted here as it had been in other articles.¹⁰⁴

Edward seemed contented in his leadership of the farm for several years after the centrifugal machine was introduced. He was busy in the mid 1880's buying and selling Jersey and Guernsey cattle through the various cattle clubs for himself and others.¹⁰⁵ He subscribed to *The Cultivator* and wrote to the editors several times regarding issues of cattle importation as well as articles regarding milk production.¹⁰⁶ Edward was well respected among agricultural circles, although many older farmers did not believe in his methods of milk production. At the age of thirty seven and the father of five children, he decided to use that well earned respectability in public service.

As a gentleman following the ideals his father taught him, Edward pursued several avenues in life. In addition to being the general manager of

¹⁰³ United States Patents (Washington, D.C.: United States Patent Office) Patent No. 281, 608.

¹⁰⁴ J.P. Sheldon, *Dairy Farming* (New York: Cassell, Petter, Galpin & Co., 1883-5)442 &c.

¹⁰⁵ *The Cultivator and Country Gentleman*, vol. L, (Albany: Luther Tucker & Son, 1885-1892) June 11, June 18, June 25, July 23. Burnett is listed several times trading, buying, or selling cattle.

Deerfoot Farm, he entered into public life in 1886. Burnett gained acceptance in many geographic regions of the country, however, it was back in his native Southborough that Edward began his real public life. In 1885 and 1886 the federal government was setting up plans to expand the reservoir system in Burnett's Southborough and other surrounding towns. As a gentleman farmer and the single largest employer in the area, Burnett had a vested interest in the lands surrounding his family's estate and decided to take action.¹⁰⁷

Edward Burnett campaigned on the Democratic ticket during the Grover Cleveland election years. In addition to running for the 9th district, Burnett was also the Northeast Region Campaign Manager for Cleveland's election. At the same time, Edward became the first president of the St. Mark's Alumni Association. His duties as President were difficult to juggle with his duties in Washington, D.C., after his election, and he was called away from the first official meeting of the Alumni Association in 1886.¹⁰⁸ He had run as the "Farmer's Candidate" and won the election while maintaining the presidency of the Alumni Association and the Bay State Agricultural Society.¹⁰⁹ Upon the election of Edward to Congress, the students of St. Mark's led a torchlight procession in his honor with delegations from Westborough and Fayville to the

¹⁰⁶ *The Cultivator and Country Gentleman*, vol. L, (Albany: Luther Tucker & Son, 1885-1892). Several issues from 1886 have letters from Burnett on these subjects.

¹⁰⁷ Nick Noble Presentation to the Southborough Historical Society (Video Recording).

¹⁰⁸ Albert Emerson Benson, *History of Saint Mark's School*. (Southborough: Alumni Association, 1925)100.

¹⁰⁹ *Biographical Dictionary of the United States Congress: 1774-1989*, 709.

family mansion. Speeches were made when they arrived including one by James Russell Lowell.¹¹⁰

As a member of the United States House of Representatives, Burnett voted on numerous bills related to agriculture including appropriations for Agricultural Experiment Stations, importation of animals for breeding, patent petitions, exportation bounties, relief funds for owners of swamp and overflow lands, and appropriations for the Department of Agriculture, etc.¹¹¹ His particular interest in the farmers of the United States was expressed by his joining the House Committee on Agriculture. The Committee on Agriculture, established in 1820, was responsible for shaping the content of bills related to the farm. These bills authorized the federal government to manage and regulate the economy and policies for the farm sector in America.¹¹² Burnett sat on the committee with other Representatives, many of whom were farmers as well, and would often interact with the Committee's counterpart in the Senate.¹¹³

Edward's seat in Congress afforded him opportunities for travel. He returned to England in 1887 and visited the Aylesbury Dairy Company and met the Prince of Wales while on a tour of the facilities.¹¹⁴ He appeared to have enjoyed his time in Washington, as he was noted joining in on the gaiety of

¹¹⁰ Albert Emerson Benson, *History of Saint Mark's School*. (Southborough: Alumni Association, 1925)97.

¹¹¹ Donald C. Bacon, ed. et al. *The Encyclopedia of the United States Congress*, vol. 1, "House Reports of the 50th Congress" (New York: Simon & Schuster, 1995).

¹¹² Donald C. Bacon, ed. et al. *The Encyclopedia of the United States Congress*, vol. 1, "House Reports of the 50th Congress" (New York: Simon & Schuster, 1995)31.

¹¹³ Donald C. Bacon, ed. et al. *The Encyclopedia of the United States Congress*, vol. 1, "House Reports of the 50th Congress" (New York: Simon & Schuster, 1995)32 & 34.

White House parties.¹¹⁵ He had several speaking engagements while serving as a Representative, but after an unsuccessful reelection campaign Burnett returned to private life. The reigns of Deerfoot Farm appear to have been turned over to his younger brother Robert, and Edward set forth on his third career and vocation, this time as an agricultural designer, which he practiced until his death.

¹¹⁴ Edward Burnett, *New York Farmers*, January 19, 1888.

¹¹⁵ Interview with John Burnett Vaughan, March 6, 1998 with the author. This quote was from an obituary found in a Milton, Massachusetts, newspaper.

Chapter Three: Edward Burnett, farm designer

"I have worked with Mr. Olmsted, the landscape gardener..."
Edward Burnett at the New York Farmers [Club]

Deerfoot Farm as Laboratory

Leaving public office marks Edward Burnett's entrance into the world of farm architecture. While most professional men in the field of landscape design in the late 19th century attended a specialized academic program followed by an apprenticeship of sorts, Burnett was never trained in an academic sense as an architect. He did, however, bring to his practice a long history of practical life experience and expertise in scientific farming. After the unsuccessful reelection campaign, Burnett briefly returned to Deerfoot Farm. Perhaps he was inspired to return to his true occupation while back at the Farm. Deerfoot would serve as a model for many of Burnett's gentlemen's farm designs.

As stated before, there is little known about Deerfoot Farm, however, the dairy was showcased in several agricultural journals including the *United States Agricultural Reports* and the *Journal of the Royal Agricultural Society*. Deerfoot Farm consisted of three hundred acres of land, one hundred acres were cultivated. Besides the steam powered Sausage Factory, the Dairy department stood on the site. The Dairy was renowned for its quality butter and

milk. The gilt-edge products were possible only through the high quality of the Deerfoot herd.¹¹⁶

The Deerfoot herd was comprised exclusively of Jersey cattle. In 1885, seventy Jerseys were kept on site, each producing five pounds of butter a week.¹¹⁷ Burnett was well known for his importation of better breeds of cattle to America. In fact, he received a ten to twenty percent discount when purchasing large orders.¹¹⁸ The first cattle at Deerfoot were purchased by Edward's father in 1854 from his business partner at that time, Dr. Morton.¹¹⁹ Edward and his father both wanted the same results from their respective herd, a rich and plentiful supply of milk.

When Edward took over the farm in 1871 after returning from Harvard, he began purchasing Jersey cattle of large size, long bodies, and well developed udders. At that time many gentlemen farmers were more interested in purchasing cattle for show, looking for correct color and good looks, rather than for results. Burnett bought only the best stock and bred them successfully. The Deerfoot herd, in agricultural circles, was considered to have good gray color, be large in size with fine heads, small horns, good texture and quality, a slim

¹¹⁶ *Annual Report of the Committee of Agriculture for the Year 1880*, "United States Department of Agriculture Report 1880," (Washington, D.C.:Government Printing Office, 1881)629 & 633.

¹¹⁷ J.P. Sheldon, *Dairy Farming*, (New York: Cassell, Petter, Galpin & Co., 1883-5)440.

¹¹⁸ John Bryan, *Biltmore Estate*, (New York: Rizzoli International Publications Inc., 1994)87.

¹¹⁹ *Annual Report of the Committee of Agriculture for the Year 1880*, "United States Department of Agriculture Report 1880," (Washington, D.C.:Government Printing Office, 1881)633. Dr. Morton was responsible for discovering ether.

neck, a long body, broad flanks, and good udders.¹²⁰ The cows matured early and continued to produce milk for a long period of time.

First and foremost, Burnett believed that the care of cattle was of the most importance. The “cow should be treated like a duchess” was his motto.¹²¹ He required four things for running a good dairy business, cleanliness in the stables and dairy, a regular schedule, good feed, and a thermometer.¹²² First and foremost was cleanliness. The Deerfoot herd was kept warm and sheltered in the stables. The stables were whitewashed every month and washed down on a regular basis. Each cow was looked after in a similar manner being brushed or carded twice a day.¹²³ The cows were kept on a regular schedule to ensure a constant supply of milk. The cows were milked twice a day, once at 5:00 am in the summer and at 5:30 am in the winter and again at 5:00 pm.¹²⁴ The cows were kept in the pasture in the summer and inside the stables and the cow yard in the cold winter months. In addition to maintaining the activity of the cattle in warm and cold seasons, the temperature inside the stables and dairy was kept at certain levels dependent on the activity going on in the building. The feeding of the cows was strictly regulated by a milker who was responsible

¹²⁰ *Annual Report of the Committee of Agriculture for the Year 1880*, “United States Department of Agriculture Report 1880,” (Washington, D.C.:Government Printing Office, 1881)633.

¹²¹ Edward Burnett, *New York Farmers*, January 19, 1888, p. 19.

¹²² *Annual Report of the Committee of Agriculture for the Year 1880*, “United States Department of Agriculture Report 1880,” (Washington, D.C.:Government Printing Office, 1881)637.

¹²³ J.P. Sheldon, *Dairy Farming*, (New York: Cassell, Petter, Galpin & Co., 1883-5)403.

¹²⁴ *Annual Report of the Committee of Agriculture for the Year 1880*, “United States Department of Agriculture Report 1880,” (Washington, D.C.:Government Printing Office, 1881)634.

for eight or nine cows at a time. The diet was regulated depending on the time of the year and the availability of pasture grasses and cabbage.¹²⁵

The supply of proper food was of great importance at Deerfoot. Burnett took great care to provide only the best quality feed. Cows were grazed in the pasture in the summer months. When mid-summer rolled around, the cows were switched to clover and grain. In the winter after milking, the herd was fed grain, Indian meal, and cabbage in the morning and fed again in the afternoon on roots and hay.¹²⁶ The hay was procured from the tillable land, or what Burnett called a "meadow" on Deerfoot, starting on June 5th of each year followed by one or two additional crops during the season.¹²⁷

Burnett believed that the quality of the feed was of greater importance than the quantity, but also warned that over or underfeeding would affect the quality and quantity of milk and butter.¹²⁸ Without careful management of the dairy, however, all efforts taken in sheltering, feeding, and caring for the animals would be for naught. The Deerfoot Dairy was considered one of the best examples of a working dairy in America. It gained such notoriety that it was once called the "famous Deerfoot Dairy."¹²⁹ Burnett ran his dairy with a watchful eye and specific rules.

¹²⁵ J.P. Sheldon, *Dairy Farming*, (New York: Cassell, Petter, Galpin & Co., 1883-5)403.

¹²⁶ *Annual Report of the Committee of Agriculture for the Year 1880*, "United States Department of Agriculture Report 1880," (Washington, D.C.:Government Printing Office, 1881)637.

¹²⁷ Edward Burnett, *New York Farmers*, December 20, 1898.

¹²⁸ Edward Burnett, *New York Farmers*, February 19, 1883,40.

¹²⁹ J.P. Sheldon, *Dairy Farming*, (New York: Cassell, Petter, Galpin & Co., 1883-5)440.

The dairy was a two level building built into the side of a hill (see Fig.

3.1).

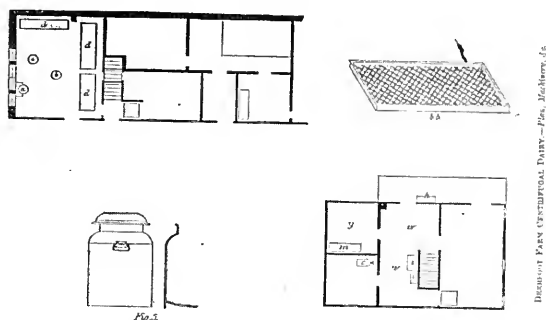


Fig. 3.1 Deerfoot Dairy Plans

The stone constructed lower level was south facing, complete with windows, and the rear of the building was built into the earth. The framed upper level was north facing and three bays wide. Windows were on two sides of the structure. Inside stairs and an elevator connected the two levels. The arrangement of the dairy was directly related to producing a high quality milk. The first step in the process was the delivery of milk. Whether it came from Burnett's own herd of Jerseys or from neighboring dairymen, the milk, fresh from the cow, was delivered in cans to the Delivery Room on the east side of the three room upper level of the building. The cans were first weighed on a scale and the amount of milk from each cow was recorded. The milk was then taken across the Wash Room and into the Refrigerator Room where it was poured into the fresh milk tank. The empty cans were then taken outside through the Wash Room to be

cleansed in steam jets under the shed roof. After a thorough cleaning, the cans were stored in the Delivery Room until needed again.¹³⁰

Depending on the amount needed for local orders, a certain amount of "whole milk" was taken from the tank and put into one quart jars. The jars were sealed with a rubber ring and placed in a metal bracket and brought to the Delivery Room where they were picked up by delivery men and transported to local homes. The delivery men would also return empty milk jars to the Wash Room where each was cleaned in tubs. The two cleaning tubs were located near the stairway down to the lower level. The tubs were complete with a cold water faucet and piped for steam to heat the water when needed.

The milk in the Delivery Room milk tank was connected by piping to the three Centrifugal Machines located directly below in the Centrifugal Room. A faucet connected to the pipes would be opened by the milk men working in the Centrifugal Room whenever milk was needed. The three machines operated by steam power. Once the whole milk was received by the machines, the power was turned on and the differing specific gravity of the milk and the cream would force their separation, the cream collected in the center of the machine. Two of the machines extracted the cream by forcing it out by adding more skim milk to the machine thereby displacing the cream. The skim milk was forced out in a similar manner by adding whole milk. The third machine required the manual

¹³⁰ *Annual Report of the Committee of Agriculture for the Year 1880*, "United States Department of Agriculture Report 1880," (Washington, D.C.:Government Printing Office, 1881)637.

removal of the cream with a basic “pipe scoop” used in deep setting. The entire process would be repeated two or three times an hour.¹³¹

The cream and the milk were then piped into separate pails. The milk was stored in milk cans and set in one of the three tanks in the room. Interestingly, the refrigeration tanks were also an invention by Burnett. The innovative method of cooling used water and air to keep the milk cool. The tanks were set so that only the top third of the can was submerged in ice water. The lower two thirds of the can was in a cold air pocket created by blocks of ice at the base of the tank and the top ice water section. Burnett found that the temperature of milk was maintained more easily by this cold air method.¹³² The cream was carried by elevator back up to the upper level. A portion of the cream was bottled in jars and delivered as fresh cream while the majority was taken to the Churning Room. The cream was allowed to sit for about twenty four hours to obtain a slight acidity, the level of acidity defined by Burnett, then poured into the barrel churn. Powered by steam, twelve gallons of cream were churned for about twenty five minutes at no more than sixty degrees.¹³³ The butter was then taken from the churn and washed three times and removed to the Vermont Machine Company Butter Maker.¹³⁴ In the butter maker, it was

¹³¹ *Annual Report of the Committee of Agriculture for the Year 1880*, “United States Department of Agriculture Report 1880,” (Washington, D.C.:Government Printing Office, 1881)639.

¹³² J.P. Sheldon, *Dairy Farming*, (New York: Cassell, Petter, Galpin & Co., 1883-5)440.

¹³³ *Annual Report of the Committee of Agriculture for the Year 1880*, “United States Department of Agriculture Report 1880,” (Washington, D.C.:Government Printing Office, 1881)646.

¹³⁴ J.P. Sheldon, *Dairy Farming*, (New York: Cassell, Petter, Galpin & Co., 1883-5)440. Sheldon writes that Burnett uses a “Philadelphia Barrel Churn.” It is more likely that Sturevant was correct.

worked, salted, and sponged. The butter was worked by a trained operator then removed to a table where it was worked into blocks with wooden pads (Burnett never allowed hands to touch the product) and cut and weighed into half pound sections.¹³⁵ This process took place four or five times a week at about twenty to thirty gallons each time. The butter was wrapped in muslin in triangular blocks, packed in tin boxes which were placed in wooden boxes, surrounded by ice, and stored in the Delivery Room until the train arrived to take it to market in Boston.¹³⁶

The Agricultural Advisor

Edward's success as the Deerfoot Dairy proprietor was well known among the wealthy men for whom he purchased cattle. In 1889, he was retained by George Vanderbilt to help him in the agricultural department at his new country estate he was building in Asheville, North Carolina. Burnett had worked as a purchasing agent for George Vanderbilt at his Staten Island and Bar Harbor estates as well as for William Vanderbilt importing horses.¹³⁷ Edward was aware that George Vanderbilt had never created an estate from the ground up and offered his services as a professional.¹³⁸ Burnett was present at Biltmore from the very beginning. In 1891, he traveled to the site with George

Sheldon seems to have visited Deerfoot somewhat earlier than his book was published, making some of his information about Burnett's operation obsolete.

¹³⁵ *Annual Report of the Committee of Agriculture for the Year 1880*, "United States Department of Agriculture Report 1880," (Washington, D.C.:Government Printing Office, 1881)647.

¹³⁶ J.P. Sheldon, *Dairy Farming*, (New York: Cassell, Petter, Galpin & Co., 1883-5)440. The buttermilk, a by product of this process, was sent to the piggery to be used in feeding. Burnett also made clotted cream using a cooling chest, steam, salt, and ice.

¹³⁷ John M. Bryan, *Biltmore Estate*, (New York: Rizzoli International Publications Inc., 1994)89.

Vanderbilt, Frederick Law Olmsted, Richard Morris Hunt, Hunt's son Richard

Howland Hunt, and Gifford Pinchot in Vanderbilt's private rail car, the *Riva*.¹³⁹

While maintaining a professional relationship with these men, he seemed to get along well with all on a personal basis (see Fig. 3.2). Vanderbilt wrote to Burnett in familial terms, while Pinchot seemed to be close with Burnett.



Fig. 3.2 From left Edward Burnett, Richard M. Hunt, George W. Vanderbilt; seated Frederick L. Olmsted, Richard H. Hunt
Pinchot wrote about a time he had at the Brick House, the only standing

building on the property, that was used as a kind of base camp for the operation. He wrote of a "gay time" he had with Miss. S. and Miss. S., noting (perhaps in bragging terms), "You may have thought there were lively times at the Brick House before you left....," of the fun they were having in his absence.¹⁴⁰

¹³⁸ John M. Bryan, *Biltmore Estate*, (New York: Rizzoli International Publications Inc., 1994)89.

¹³⁹ John M. Byran, *Biltmore Estate*, (New York: Rizzoli International Publications Inc., 1994)87.

¹⁴⁰ John M. Byran, *Biltmore Estate*, (New York: Rizzoli International Publications Inc., 1994)87.

Burnett was hired to establish the agricultural department of the estate.

He organized the estate, directed the establishment of the vegetable garden and designed the dairy structures and laid out its operations as well as designed temporary buildings including a tool shed and stable. Burnett suggested ways to set up accounting and filing systems, just as he had kept meticulous records at Deerfoot. He also acted as the primary purchasing agent of animals, taking advantage of his discount. He also purchased non-agricultural items, receiving a ten percent commission in addition to his set two thousand dollars a year. In the first years of the creation of Biltmore, there was some confusion between the duties of procuring implements needed for construction between Burnett and Olmsted. Olmsted wrote to Charles McNamee, the estate manager, regarding a stone crusher. This stone crusher, usually a machine used in road construction, was in the end decided, between Olmsted and Burnett, to go to Burnett, who was to get the crusher as well as a large engine, presumably used to run the machine.¹⁴¹

Burnett was relied upon by Vanderbilt in the same manner as Vanderbilt relied upon Olmsted and Hunt. At the near completion of the establishment of the agricultural department in early 1892, Burnett was let go. Vanderbilt reorganized to keep his estate matters in order and turned over operations of the department to Charles McNamee, who had been working closely under

¹⁴¹ Biltmore Estate Curatorial Department. Files on Edward Burnett. Letter to CM from FLO, December 7, 1889.

Edward.¹⁴² Later that same year, Burnett was at H. McKay Twombly's estate in Madison, New Jersey.

Burnett may have met Twombly while back in Massachusetts. Twombly family members attended St. Mark's as well as Harvard. Although they attended St. Mark's and Harvard after Burnett graduated, due to his father's connection with the school and the area, he probably had relations with either Arthur Twombly, who was at Harvard with Burnett, or his family who were from Boston.¹⁴³ Edward Burnett began his affiliation with the Twombly site in 1891 when he imported cattle for his estate from England.¹⁴⁴ He may have worked at the site as early as 1890. In a speech at the *New York Farmers [Club]*, Burnett discusses his recent work at Whippany meadows draining two hundred and fifty acres of land and laying out agricultural tiles, used in creating culverts to manage irrigation and water flow, to create an outlet for water.¹⁴⁵ It is highly probable that the site in Madison, New Jersey, Burnett speaks about is Florham Farms, the Twombly Estate.

During his eight years at Florham, Burnett interacted again with the Olmsted firm. Burnett wrote in 1892 to F.L. Olmsted about the dissatisfaction someone at the firm had with the progress being made at the site. At that time, he had also had discussions with Twombly about connecting the estate with the

¹⁴² Biltmore Estate Curatorial Department. Files on Edward Burnett. Biography of Edward Burnett at Biltmore.

¹⁴³ *Catalogue of the Officers and Alumni, and Scholars of Saint Mark's School 1865-1901*, (Boston: Mills and Kinght Company, 1901)24.

¹⁴⁴ American Guernsey Cattle Club. *The Story of Half a Century: 1877 - 1927*, (Peterboro, NH, 1927).

railroads and the changes that would have to occur to allow that to happen.

Burnett related that information to Olmsted. In addition, he voiced his reservations about the proposed suggestions in relation to “muck” that would not be able to be carried out until the following season¹⁴⁶ In 1895 Burnett retained the title of General Manager of the estate and was still working in conjunction with the Olmsted firm. He requested that a member of the firm come down to the site to visit. The “park” appears to have been enlarged since 1892 and needed landscaping. Burnett’s words, “My interest in this place having carried out the work [here] from the time of its first beginning...” show his sincere interest in the outcome of the enlargement of the estate.¹⁴⁷ Burnett left his post as General Manager of the Farm in 1900.¹⁴⁸

The Farm Designer

After leaving Florham Farms, Burnett reinvented himself yet again, instead of being considered an agricultural advisor, Burnett became a farm expert. The years between 1897 and 1904 were transitional years for Edward. During this time, Burnett gave several lectures at the *New York Farmers* [Club] and joined the organization whose members included William Vanderbilt, J.P. Morgan, Richard Morris Hunt, and Sam Sloan to name but a few of the wealthy and influential gentlemen in 1897. It is highly probable that Burnett received many of his future commissions through connections with this club. During the

¹⁴⁵ Edward Burnett, *New York Farmers*, December 11, 1890, 6 & 7.

¹⁴⁶ NYSDEC. Santanoni Files. Letter from EB to Messrs. F.L. Olmsted & Co. November 2, 1892.

¹⁴⁷ NYSDEC. Santanoni Files. Letter to Charles Eliot from EB, June 28, 1895.

years of 1901 to 1904, Burnett appeared at the estate of Robert C. Pruyn in the Adirondacks to set up a farm complex at an estate, begun in 1890.¹⁴⁹

Burnett attended regularly the meetings of the *New York Farmers* and may have even taken up residence in New York City. During the year of 1904 Edward's life took another turn when his wife suddenly passed away. A year later Edward married his deceased younger brother's widow Ethel, who was also the daughter of the president of the New York Times. Ethel was thirty and Edward was fifty five. A year later their first child, Edward's sixth, was born in New York City.¹⁵⁰ Burnett was noted as "feeling good now, as his first baby (girl) was born last Sunday..."¹⁵¹ This new relationship was probably not only a great joy to Edward but also one that brought many new connections he may have used to further his practice.

Edward Burnett opened an office, employing Alfred Hopkins, by at least 1906.¹⁵² It is possible that the two formed a business relationship earlier. They may have first met while they both worked simultaneously for Vanderbilt at his estates in the 1890's.¹⁵³ Hopkins was born in Saratoga Springs, New York, in 1870. He studied at the Ecole De Beaux Arts in Paris and had commissions

¹⁴⁸ Biographical Directory of the United States Congress: 1774-1989, p. 709. The biography notes "general manager of Flosham [Florham] Farms, Madison, NJ."

¹⁴⁹ NYSDEC. Santanoni Files. Photocopies of Santanoni Guest Books.

¹⁵⁰ Interview with Elinor Burnett Vaughan with the author, March 6, 1998.

¹⁵¹ Olmsted Associates Files. Library of Congress. Tracy Dows Estate Folders. Conference by J.C. Olmsted with Tracy Dows, April 26, 1906. Perhaps the commission by Dows was given to him as a friend looking to get Burnett's mind of the death of his first wife.

¹⁵² Olmsted Associates Files. Library of Congress. Tracy Dows Estate Folders. The first series on letters of stationary not a partnership with Alfred Hopkins, architect.

with F.W. Vanderbilt at Hyde Park and for Otto H. Kahn in New Jersey.¹⁵⁴

Together Burnett and Hopkins had an office at 11 East 24th Street, New York City, in 1906.¹⁵⁵

Together Burnett and Hopkins were involved in many projects. Edward Burnett never gave himself a title, but was considered a “Farm Expert” on architectural drawings completed by Hopkins.¹⁵⁶ Burnett completed extensive work at Foxhollow, the estate of Tracy Dows in Rhinebeck, New York on the Hudson (see Fig. 3.3).¹⁵⁷

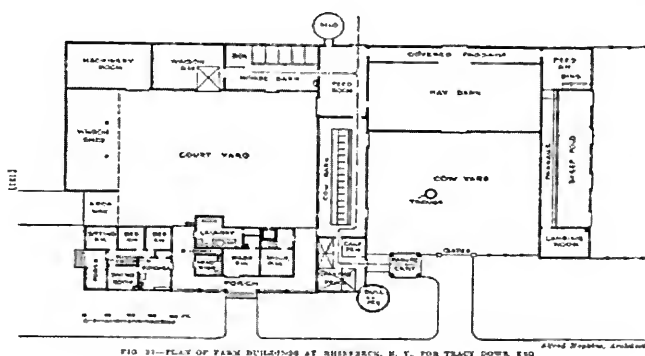


Fig. 3.3 Dow Estate Farm Complex Plan

¹⁵³ MacKey, Robert et al., *Long Island Country Houses and Their Architects 1860-1940*, (New York: W.W. Norton & Co., 1997)215. It is not clear when the two formed a relationship, it is unlikely that he worked at Santanoni.

¹⁵⁴ MacKay, Robert et al., *Long Island Country Houses and Their Architects 1860-1940*, (New York: W.W. Norton & Co., 1997)215.

¹⁵⁵ Olmsted Associates Files. Library of Congress. Tracy Dows Estate Folders. Letterhead in 1906.

¹⁵⁶ Interview with JBV with the author, March 6, 1998. JBV in his own research has found drawings with “Edward Burnett, farm expert” as the assignor. Copy of drawing in possession of John Vaughan.

¹⁵⁷ John Zukowsky, *Hudson River Villas*, (New York: Rizzoli International Publications, Inc., 1985)177. The Tracy Dows estate got its name from Foxhollow Road which runs near the estate.

Burnett received the commission from Tracy Dows himself, probably by the recommendation of Vanderbilt whose estate, Hyde Park, was nearby. Tracy Dows related to J.C. Olmsted who was on site to review the future estate that he, "has decided to put all but the house in charge of Edward Burnett, ...and wants Burnett to advise on all farm matters..."¹⁵⁸ J.C. Olmsted suggested that it would be wise to have an architect work with Burnett on the exterior of the designs. Dows replied that, "Burnett had an architect associated with him and was anxious to do all the architecture." This architect is presumably Alfred Hopkins.¹⁵⁹

Burnett was on site often to oversee the work going on. Tracy Dows laid out the requirements of the estate in 1906. In addition to the provisions for the main house and the servants, the farm required housing for various members of the farm staff. The estate was to house the Gardener and family, the Farmer and family, the Superintendent and family, as well as housing for the Coachman and family. In addition, the farm was to have stables for pleasure horses, farm horses, and cows. Other buildings required for the complex were barns for storing hay and grain, chicken houses, a sheep fold, a piggery, sheds for farm implements, a carpenter's shop, a dairy, a greenhouse, and tool house. Also included were considerations for a vegetable garden, number of cows,

¹⁵⁸ Olmsted Associates Files. Library of Congress. Tracy Dows Estate Folders. Notes by J.C. Olmsted, February 6, 1906.

¹⁵⁹ Olmsted Associates Files. Library of Congress. Tracy Dows Estate Folders. Notes by J.C. Olmsted, February 6, 1906.

horses, and chickens, as well as acreage of pasture land. The site also went so far as to establish a vineyard.¹⁶⁰

During a trip to the Dow estate, J.C. Olmsted discussed with Burnett the preliminary plans the Olmsted firm had created for the site. Burnett agreed upon the basic layout, but objected to the stable design, desiring a two wing plan with a wing for a coachmen's cottage and the other for horse stalls and provision for a shed. With the basic design of the stable, Burnett agreed to change the site he had selected on low ground to the one suggested by the Olmsted plan. He also objected to the site selection for the piggery, claiming that there was not enough shelter for the animals. Olmsted agreed to remedy the situation with substantial plantings to protect the area.¹⁶¹

By March 2nd, Hopkins had almost completed the working drawings of the farm buildings. He wrote to the Olmsted firm requesting maps with the new house arrangement as well as confirmation that Burnett would be "doing the road building."¹⁶² Burnett was appointed to construct the roads. Dows was advised by the Olmsted firm to have Burnett at the site, at least once a week, and to pay him by the visit to oversee the work of a contractor. The writer, presumably J.C. Olmsted, had reservations about Burnett being the contractor himself saying, "Personally I do not like seeing a professional man doing

¹⁶⁰ Olmsted Associates Files. Library of Congress. Tracy Dows Estate Folders. Tracy Dows Notes as to Requirements.

¹⁶¹ Olmsted Associates Files. Library of Congress. Tracy Dows Estate Folders. Notes by J.C. Olmsted, February 16, 1906.

¹⁶² Olmsted Associates Files. Library of Congress. Tracy Dows Estate Folders. Letter to Messrs. Olmsted Bros. from Tracy Dows, March 2, 1906.

contract work.”¹⁶³ This indicates that Burnett was seen as a professional among professionals.

By April, Burnett was working on designing the water supply to the estate. Wells were inadequate for a water supply to the farm but would be employed for drinking water. Burnett was working on a system to pump water from Landsman Creek.¹⁶⁴ In June, the stable was well underway and preliminary ground work was underway for the cow barn.¹⁶⁵ The following month the contractor working for Burnett ran into some problems in the road building and the Olmsted firm discussed the matter with him.¹⁶⁶ Later that month, Burnett, his assistant Rotch, his surveying assistant Tidel, met with J.C. Olmsted at the old mansion on the estate. The four discussed the current lack of fill needed to complete the roads. They were joined by the owner, and then toured the site of the newly completed farm cottage, viewed the barn framing, and agreed upon the site of the poultry house.¹⁶⁷

Late in August, J.F. Dawson of the Olmsted firm visited the Dow estate site. He and Burnett discussed the purchasing of materials for construction as

¹⁶³ Olmsted Associates Files. Library of Congress. Tracy Dows Estate Folders. Letter to Mr. Tracy Dows from Olmsted firm, presumably the hand of J.C. Olmsted.

¹⁶⁴ Olmsted Associates Files. Library of Congress. Tracy Dows Estate Folders. Conference by J.C. Olmsted with Tracy Dows, April 21, 1906.

¹⁶⁵ Olmsted Associates Files. Library of Congress. Tracy Dows Estate Folders. Notes by J.C. Olmsted, June 2, 1906.

¹⁶⁶ Olmsted Associates Files. Library of Congress. Tracy Dows Estate Folders. Letter to Edward Burnett from Olmsted firm, presumably J.C. Olmsted, July 17, 1906.

¹⁶⁷ Olmsted Associates Files. Library of Congress. Tracy Dows Estate Folders. Notes by J.C. Olmsted, July 26, 1906.

well as plantings and tree cuttings around the farm complex area.¹⁶⁸ By

September, Burnett had completed construction of the sheep buildings but declared the poultry houses off the schedule until next season. Burnett suggested “stepping several houses down” to accommodate more attractive landscaping wanted by the Olmsted firm, but wanted the cottages to remain at ninety degree angles to the main group of farm buildings. He also noted that “the sheep must be separated from the cattle” and agreed to a fence between the two.¹⁶⁹

The end of October saw work on the Hay Barn and Dairy. The cement floor of the Dairy was poured while floor boards of the cottage were being installed.¹⁷⁰ J.F. Dawson made a trip to the site during the last week of the month. In the company of Mr. Carpenter, a contractor, the two surveyed the site and discussed the placement of a cistern. Burnett suggested its placement be south of the farm buildings while Dawson suggested it be put in the yard. Dawson consented to Burnett’s idea and also conceded the removal of the grass the Olmsted firm wanted in the cow yard. Mr. Rotch and Mr. Tildel joined the two to consider the work on grading of the roads as well as the yards north of the Dairy laid out by Burnett.¹⁷¹

¹⁶⁸ Olmsted Associates Files. Library of Congress. Tracy Dows Estate Folders. Notes by J.F. Dawson, August 22, 1906.

¹⁶⁹ Olmsted Associates Files. Library of Congress. Tracy Dows Estate Folders. Letter to Olmsted Bros. from Edward Burnett, September 10, 1906.

¹⁷⁰ Olmsted Associates Files. Library of Congress. Tracy Dows Estate Folders. Letter to Olmsted Brothers from N.E. Tintle of C.H. Leonard (the contractor).

¹⁷¹ Olmsted Associates Files. Library of Congress. Tracy Dows Estate Folders. Notes by J.F. Dawson, October 26, 1906.

During the winter of 1906 and 1907 Burnett continued ordering supplies, including fencing needed for the service yard of the Superintendent's cottage and flower garden, as well as the studying of plans.¹⁷² In January, Burnett met with J.C. Olmsted at the site. The two discussed the road building and plantings. Olmsted considered planting bushes but thought it would lessen the view. Burnett agreed and added that the sheep would do little "unruly damage" to the site and allowed for a practical use as an open pasture. The two agreed that Burnett would lay out wooden walkways using the same contractor he employed at Biltmore. Dows directed Burnett to build a stone arched bridge at the road near Mr. Olin's stable, the neighboring estate. Burnett gave specific details about the size and arch design for the stone bridge. The bridge was to be constructed by a local mason while the grading would be established by a grading foreman Burnett "had used at Twombly's." After adjourning to the Olin residence next door, Burnett and Olmsted discussed the road to the Dairy and the main house. The two decided upon a scheme to allow easy delivery to both sites.

The same afternoon Burnett, Olmsted, Dows, and the others toured the site. Olmsted was unhappy with the size and look of the fencing posts. Dow suggested that they be painted white; Olmsted replied, "...by no means." They continued to the old orchard and discussed new apple tree plantings. After the group viewed the hay barn and cow stalls, they discussed the layout of the

¹⁷² Olmsted Associates Files. Library of Congress. Tracy Dows Estate Folders. Letter to Olmsted

plumbing and additional piping. The grading of the barn area also was

considered, and the group finally adjourned after a full day of deliberations.¹⁷³

February and March brought further conversations between Burnett and Olmsted regarding the cottages, stone bridge, and foundation plantings. A March inspection showed the ice house completed and painted gray. The poultry house, gardeners cottage, and gate house plans were completed. The farm barns and stable complex were finished, and trenches through the site were being dug.¹⁷⁴ By April, Dows became impatient with the progress of the estate and complained to Dawson privately about Burnett as a contractor. Later that day Burnett also expressed concern about Dows disposition in regard to his work. Dawson calmed Dows' fears, and Burnett was out of jeopardy.¹⁷⁵

That Spring further grading and road alterations were undertaken. The subject of plantings was also considered. Suggestions of planting vines along the base of the buildings in the cow yard were put off by Burnett. He suggested that they could be planted at the corners of the buildings in clumps. On a train to Boston in June, Dawson and Burnett discussed fencing near the drive south of the farm buildings. Burnett declared that it was necessary to have fencing at that point or the cattle would venture into the fields as well as eat the shrubbery

Bros. from Edward Burnett, December 7, 1906. Notes by J.F. Dawson, December 22, 1906.

¹⁷³ Olmsted Associates Files. Library of Congress. Tracy Dows Estate Folders. Notes by J.C. Olmsted, January 10, 1907.

¹⁷⁴ Olmsted Associates Files. Library of Congress. Tracy Dows Estate Folders. Notes by J.C. Olmsted, March 7, 1907.

¹⁷⁵ Olmsted Associates Files. Library of Congress. Tracy Dows Estate Folders. Notes by J.F. Dawson, April 4, 1907.

around the farm complex.¹⁷⁶ Burnett continued his work at the site until July 1907, when Dow decided on a change of management on the estate thus ending Burnett's connection with Foxhollow.¹⁷⁷

The finished Foxhollow Estate fronted the road. The entire complex was rectangular in form, complete with a two story Superintendents Cottage situated in the southwest corner of the complex, abutting an archway into the courtyard on one side and the Dairy building on the other. The Dairy, much like the Deerfoot Dairy, had a covered shed roof, delivery room, milk room, and washroom.¹⁷⁸ On the north side of the arched opening a wagon shed, machinery room, and wagon room formed two sides of the interior courtyard. The remainder of the courtyard was formed by connecting the wagon room to the horse barn, feed room (which accepts a silo), a cow barn with fifteen stanchions, a calf room with pens, and a small bull pen at the edge. To the east of the main courtyard section, the large hay barn was connected by a covered passage to the feed room. To the east of the hay barn was a feed room with bins that would have accepted feed for the sheep fold to the south connected by a passage to the lambing room. This section of the complex formed a cow yard with a trough enclosed with fencing and a gate.¹⁷⁹

¹⁷⁶ Olmsted Associates Files. Library of Congress. Tracy Dows Estate Folders. Notes by J.F. Dawson, May 15, 1907 & June 12, 1907.

¹⁷⁷ Olmsted Associates Files. Library of Congress. Tracy Dows Estate Folders. Letter to Tracy Dows from Olmsted Bros., July 8, 1907.

¹⁷⁸ There is a lower level to the Dairy, but plans were not found of the site.

¹⁷⁹ Alfred Hopkins, *Modern Farm Buildings*. New and Revised Third Edition, (New York: Robert M. McBride & Co., 1920)131.

Foxhollow was a large commission for Burnett's office but was

representative of the work the firm undertook. While working together, Burnett and Hopkins designed and executed the construction of many gentlemen's farms including the Harry J. Fisher Estate in Greenwich, Connecticut (see Fig. 3.4).¹⁸⁰

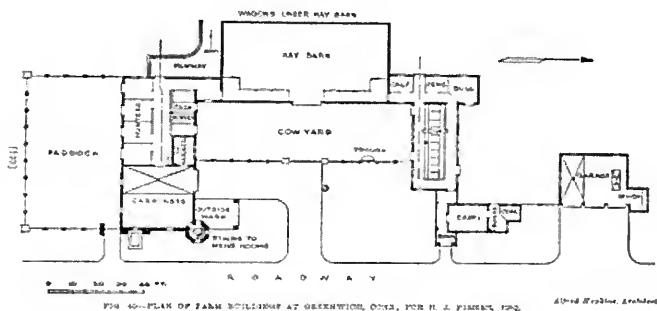


Fig. 3.4 Fisher Estate Farm Complex Plan

The Fisher Estate was on a smaller scale than the Dows Estate in New York. The country retreat was divided between recreational hunting and dairying. Like most of the designs, Hopkins illustrated all buildings related to the site at ninety degree angles and constructed into a slight slope. The cow yard was in the center of the complex adjacent to the hay barn, which also stored wagons on the ground level below. To the north was a connected structure for calves and the bull with a barn housing cow stanchions. West of that section was the dairy. Entry into the dairy was by way of a covered porch. A small boiler was in

¹⁸⁰ Olmsted Associates Files. Library of Congress. H.F. Fisher Estate Folders. The Olmsted firm recorded the arrival of plans and maps of buildings designed and constructed at the estate by

the north room with a space for coal storage. Along the south section of the grouping was space for farm horses and "hunters." A fenced paddock and runway was provided for exercise. The east side of the southern section completed the connected complex with a carriage house, outside washroom, and stair tower to the men's rooms above. The garage to the north of the complex was not directly connected but included in the design.¹⁸¹

Burnett was also responsible for constructing several commercial dairies while employing Hopkins. Burnett designed and built a commercial dairy for Mr. F.B. Lord at Cedarhurst, Long Island, and for J. Reed Whipple at New Boston, New Hampshire.¹⁸² At Cedarhurst, the milk was delivered to the upper level and presumably piped down to the milk room on the lower level similar to the Deerfoot method (see Fig. 3.5).

Burnett. Their firm was retained to do plantings after the estate was completed.

¹⁸¹ Alfred Hopkins, *Modern Farm Buildings*. New and Revised Third Edition, (New York: Robert M. McBride & Co., 1920)138.

¹⁸² Olmsted Associates Files. Library of Congress. J.R. Whipple Folder. Letter to Olmsted Bros. from Edward Burnett, October 8, 1909. Tracy Dows Folders. Notes from J.C. Olmsted state that Burnett told him about a dairy he designed at Cedarhurst, Long Island.

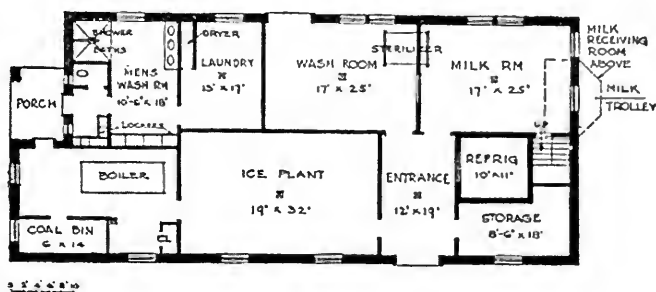


FIG. 28—PLAN OF DAIRY AT CEDARHURST, L. I.

Fig. 3.5 Cedarhurst Dairy Plan

The Dairy was designed to sustain the needs of one hundred cows. Located away from the barn, the milk was delivered to the dairy by an "elevated trolley" in twenty gallon cans. The milk was then poured into a cooler or into the separator. After separation, the milk was bottled and stored in the refrigerator in the adjacent room. The wash room was located next to the milk room complete with a sterilizer. To the west of the entrance on the lower level was the ice plant, and to the west of that was the boiler and a coal storage bin. The remainder of the lower level could only be entered from the porch. One of the rooms was the men's wash room with showers and baths as well as basins and lockers. The other room was outfitted as a laundry including a dryer. The laundry room was installed because of strict guidelines of cleanliness within the dairy required the white suits worn by workers be sterilized and dried on a regular basis.¹⁸³

¹⁸³ Alfred Hopkins. *Modern Farm Buildings*. New and Revised Third Edition, (New York: Robert M. McBride & Co., 1920)96 & 97.

The commercial dairy for J.R. Whipple in New Boston, New Hampshire, was built about 1909 (see Fig. 3.6).

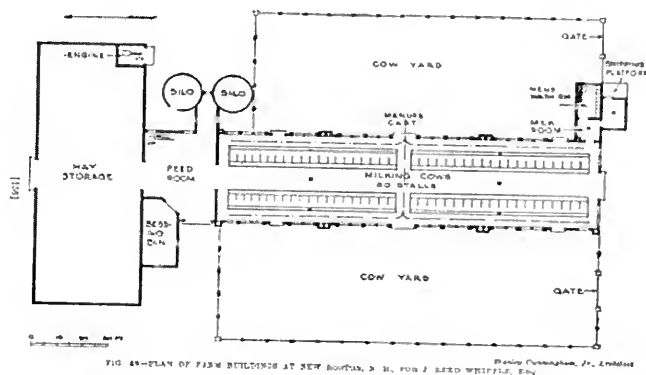


Fig. 3.6 Whipple Dairy Farm Complex

The Office of Edward Burnett was responsible for all the farm buildings except the garage.¹⁸⁴ The several hundred acre site supplied milk and pork products for all of J.R. Whipple's hotels.¹⁸⁵ The plans were drawn up by Stanley Cunningham who was working in Burnett's office at this time. Even though the landscape architect, Arthur Grinnell Rotch was working in Burnett's office, little attention was paid to the landscaping of the commercial dairy, and the Olmsted firm was commissioned to do minimal plantings about the site.¹⁸⁶ The cow barns were constructed to allow for maximum ventilation while remaining

¹⁸⁴ Olmsted Associates Files. Library of Congress. J.R. Whipple Folder. Letter to Olmsted Bros. from Edward Burnett, October 8, 1909.

¹⁸⁵ Olmsted Associates Files. Library of Congress. J.R. Whipple Folder. Notes by C.R. Parker, October 6, 1909.

¹⁸⁶ Olmsted Associates Files. Library of Congress. J.R. Whipple Folder. Letter to Olmsted Bros. from Edward Burnett, October 8, 1909.

fireproof. The long milking barn, housing eighty stalls, was flanked by fenced cow yards on both sides. The hay barn to the north was connected to the milking barn through the feed room. A bedding bin was adjacent to the feed room on one side and two silos were on the other. The dairy in this project consisted only of a milk room, a shipping platform, and a men's washroom.¹⁸⁷

In the last twenty five years of Edward Burnett's life, he worked with Alfred Hopkins until, at least, 1915.¹⁸⁸ In 1916 Burnett employed A.E. Lyford, civil engineer, and F.S. Marlow, architect, in his East 24th Street office. In the first decades of the twentieth century, Burnett worked for Frederick W. Vanderbilt at Hyde Park, and Francis Lynde Stetson, Esq. at Sterlington, New York (see Fig. 3.7).

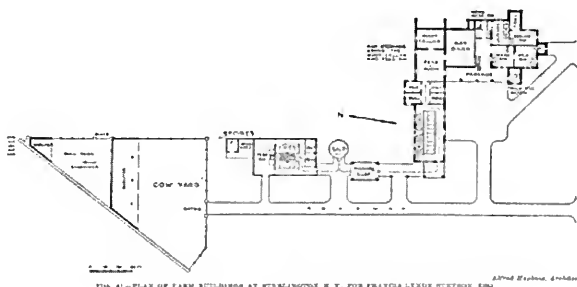


Fig. 3.7 Stetson Estate Farm Complex Plan

¹⁸⁷ Alfred Hopkins, *Modern Farm Buildings*. New and Revised Third Edition, (New York: Robert M. McBride & Co., 1920)155-157.

¹⁸⁸ MacKay, Robert et al. *Long Island Country Houses and Their Architects 1860-1940*, (New York: W.W. Norton & Co., 1997)215. The editors suggest that the WWI building slump forced Hopkins to change his career path and begin designing prisons.

Burnett also worked on an estate for "...a friend named Bishop" where he built a barn.¹⁸⁹ Burnett was responsible as well for plans of the International Garden Club in New York City.¹⁹⁰

It is highly probable that additional gentlemen's estates featured the work of Edward Burnett. The W.R. Coe estate in Oyster Bay, Long Island, was probably a Burnett commission.¹⁹¹ The Olmsted Brothers firm recommended Burnett as a candidate for designing a new or improved farm complex at Miss Helen Gould's estate, Lyndhurst in Tarrytown, New York.¹⁹² Based on the general designs published in Hopkins' book of farm complexes, it is possible that Burnett was also involved in the designs of estates at Scarsboro, New York, Morristown, New Jersey, Woodbury Falls, New York, North Easton, Massachusetts, and White Cliffs, New York.¹⁹³ Additionally several estates on Long Island, New York, designed while Hopkins was employed at Burnett's office, may have involved Burnett. These include farm sites in Bay Shore, Westbury, Islip, Brookville, Massapequa, Locust Valley, Oakdale, and Laurel Hollow, all built between the years 1900 and 1915.¹⁹⁴

¹⁸⁹ Olmsted Associates Files. Library of Congress. Tracy Dows Estate Folders. Notes by J.C. Olmsted notes Burnett "...had to go to his jobs at Fred. W. Vanderbilt's," and "...went to work on the Stetson Place."

¹⁹⁰ Olmsted Associates Files. Library of Congress. International Garden Club Folder. Letter to Olmsted Bros. from Edward Burnett and A.E. Lyford, September 22, 1916.

¹⁹¹ Olmsted Historic Site Archives. Client Card Records. The files on this estate at the Library of Congress were unattainable at the time this thesis was written.

¹⁹² Olmsted Associates Files. Library of Congress. Lyndhurst Folder. Letter from J.N. Dawson to Edward Burnett, January 29, 1907. Research at the time this thesis was written was inconclusive.

¹⁹³ Alfred Hopkins, *Modern Farm Buildings*. New and Revised Third Edition, (New York: Robert M. McBride & Co., 1920)8.

¹⁹⁴ MacKay, Robert et al. *Long Island Country Houses and Their Architects 1860-1940*, (New York: W.W. Norton & Co., 1997)216-217.

Future research on Long Island, on the Hudson River, and throughout

New Jersey may substantiate the probability that Burnett was involved in the design and execution of some or all of these sites. The absence of Burnett's name on designs created by his office can be explained. Burnett was not educated or registered as an architect, though there are three drawings published by Burnett (see Figs. 3.8, 3.9, 3.10).

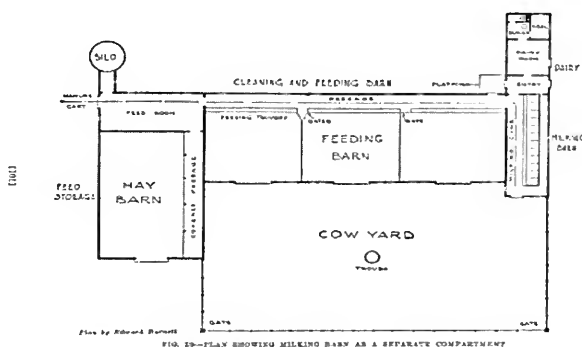


Fig. 3.8 Burnett Plan of Detached Dairy Farm

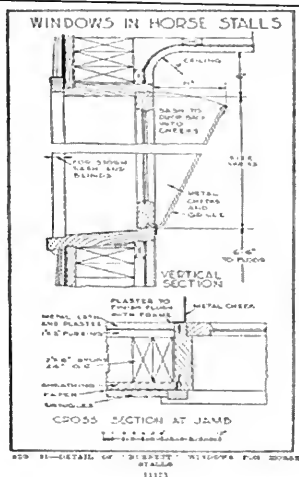


Fig. 3.9 Burnett Plan of Horse Stall Windows

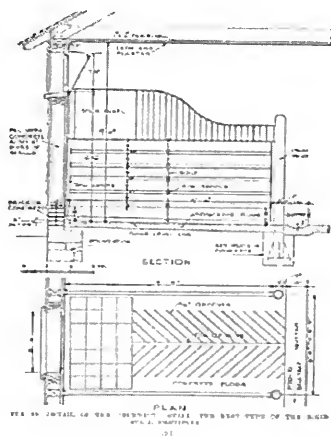


Fig. 3.10 Burnett Plan of Cow Stanchions

While most considered him a “farm architect,” to maintain a professional practice, Burnett allowed his ideas to be drafted by the architects he employed

in his office. The designs drawn by Hopkins and Cunningham clearly display

the theory of dairying Burnett began years earlier at his own Deerfoot Farm.

While Burnett maintained a thriving professional practice for about twenty years in New York City, he also was active on a personal level. Edward and Mabel lived comfortably at 111 5th Avenue in Manhattan. Their first child arrived while he was working on the Tracy Dows Estate in 1906. The second arrived two years later followed by four additional children in 1909, 1910, 1912, and 1913.¹⁹⁵ Two of the children were born in Peterborough, New Hampshire, at the family's estate called Four Winds Farm. Four Winds was a gift given to Mabel and Edward as a wedding present in 1905 by her father. The Farm was sold in about 1915 when the family could no longer keep up the site. Edward's youngest daughter, Elinor, was only 14 when he passed away but has fond memories of Edward sitting out in the workshop making furniture.¹⁹⁶ He and Mabel moved to Milton, Massachusetts, in 1921 to be closer to their children who were attending school nearby. Edward died in 1925 after an illness of several years at the age of seventy five leaving behind ten children, countless grandchildren, a wife, and a legacy of exceptional and productive work on gentlemen's estates.(see Fig. 3.11)¹⁹⁷

¹⁹⁵ NYSDEC. Santanoni Files. Information conferred from JBV on the Burnett family.

¹⁹⁶ Interview with Elinor Burnett Vaughan with the author, March 6, 1998.

¹⁹⁷ Harvard University Archives. Copy of obituary from Boston Transcript. Also notes Burnett was a member of the Union Club of Boston and the University Club in New York City.



Fig. 3.11 Edward Burnett later in life, date unknown

The Pruyn Estate: Great Camp Santanoni

*"His idea was to establish a simple camp
where he and his family could go during vacations
and rough it in the wilderness.
Even milk was unprocurable and so in the first season
Mr.. Pruyn bought a cow..."
-Guy H. Lee in The Sportsman*

Treasures of the Adirondack State Park

Located in the Adirondack Mountains and part of the Adirondack State Park, Great Camp Santanoni stretches along a narrow dirt road for five miles encompassing over twenty eight thousand acres of forest land now owned by the State of New York. In the late 19th century, Robert C. Pruyn, a wealthy banker from Albany, began amassing large tracts of land between Harries (now Harris) Lake and Newcomb Lake to establish a wilderness reserve for a summer getaway for himself and his family. The Pruyn family owned the estate until 1955 when the cost to care for the site became too expensive for the children of Robert Pruyn. Santanoni was sold to the Melvin family who owned

the estate until 1972, when it was sold to the Nature Conservancy who in turn sold it to the State of New York.¹⁹⁸

While other wealthy industrialists were building large mansions and laying out expansive grounds in the late 19th century along the Hudson River, Robert Pruyn took an interest in the Adirondacks as a refuge from the busy city of Albany. By the 1890's active debate about the fate of the Adirondack Mountains in New York State was an issue. The area was seen as unfit for farming, instead, the inhospitable North Country was seen fit for clear cutting and mining. The vast resources of the Adirondacks were being plundered for profit while men such as Robert Pruyn were buying large expanses of land to create reserves for personal use. From Saranac Lake to Racquette Lake, the Great Camps of the "robber barons" were being built. Instead of clearing the land of trees and stripping the mountains of their minerals, these men wanted nothing more than a stretch of land among the healthful mountains and tall forests. The realization of the Adirondack State Park in 1892 allowed for this possibility by protecting the entire area. Those wealthy enough to travel to and maintain such retreats did so with a passion, creating selfcontained oasis in the wilderness.

After Robert Pruyn had completed the major construction of the Main Camp buildings, Robert Pruyn called upon Edward Burnett to design the farm for his estate. Like the estates of his contemporaries, Vanderbilt, Twombly, and

¹⁹⁸ Rob Engel, *A History of Camp Santanoni, The Adirondack Retreat of Robert Pruyn*,

Dows discussed in previous chapters of this thesis, Pruyn's country retreat

consisted of a large main house complex, gate house, and a model farm complex. The distance and hardship involved when traveling to Santanoni was great. In the beginning, the journey to the estate took two full days of travel from Albany. Eventually the train came to the nearby town of North Creek, about forty miles from Newcomb, and lessened the traveling time to a single day. The terrain, however, did not make for easy travel for the entire Pruyn family, their servants, as well as for all provisions needed for a three month stay in the mountains. There were always plentiful stocks of wild game, and Pruyn brought a cow to the site as early as 1891 to provide a steady supply of milk, but this was not enough to support a camp, housing as many as sixteen people at a time. The need for a farm to provide the necessary elements for comfortable living was evident.

Edward Burnett at Santanoni

One of the tracks of land along the road to the Main Camp contained a farm house and a barn when the original purchase was made by Robert Pruyn. Pruyn could have easily hired men from the hamlet of Newcomb to build and manage a farm at that site. However, he had loftier goals in mind, however, and called upon Edward Burnett to design a farm that would provide food for his family and guests, make enough money to keep itself running, and look the part of a gentleman's estate. It is not clear how Robert Pruyn and Edward Burnett

came to know one another. Based on other estates worked on or attributed to

Burnett in Chapter Three, Burnett often received his commissions by associations with other wealthy estate owners for whom he had worked. His association with the *New York Farmers* [Club] was probably the connection. Robert Pruyn knew several men in the club including Frederick and William Vanderbilt, James Fenimore Cooper, and Gifford Pinchot.¹⁹⁹ No doubt, the work Burnett had done at the Vanderbilt estates and at Twombly Estate, in addition to the talks he delivered in front of Santanoni guest James Fenimore Cooper, helped him to receive the Santanoni commission.²⁰⁰

The site of the farm had already been chosen by default. The south facing old farm house and barn sat on the side of a hill overlooking an open marshy area about one mile from the entrance to the Santanoni Reserve (see Figs. 4.1 & 4.2).

¹⁹⁹ Adirondack Mountain Museum. Santanoni Guest Book Collection. Blue Mountain Lake, NY. All three men signed the guestbooks.

²⁰⁰ New York Farmer's [Club], 1897 - 1906. During these years Cooper, among other notable members, was part of the elite club.

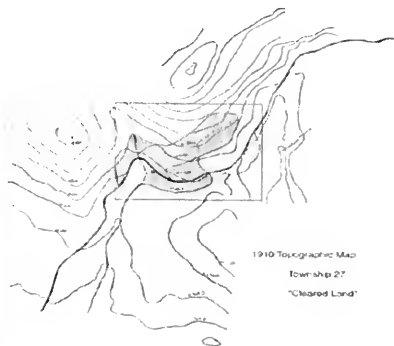


Fig. 4.1 & 4.2, 1910 Topo. Map of Santanoni Site & tracing of same

The placement of the original barns set the stage for the new Burnett plan, instituted in 1901 and completed in 1904.²⁰¹ Most of the sites Burnett worked on in his career were located on relatively flat sections of land. The Santanoni Farm posed difficult problems as it was perched in the center of a steeply sloping hill (see Fig. 4.3).

²⁰¹ NYSDEC. Santanoni Map Collection. Fisher & Bryant Topographic Map of Santanoni Preserve, 1910. Area marked as "cleared land" considered the boundaries of the Farm Complex.

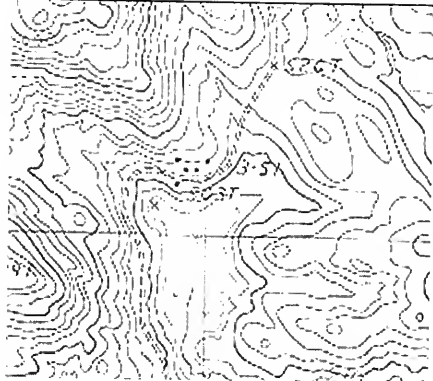


Fig. 4.3 USGS Topo. Map & trace of Santanoni Farm Complex Site

Burnett conditioned the site to fit the needs of the Pruyn family. He was probably responsible for regrading the road bed, manipulating the natural springs, building retaining walls, and laying out hay fields and pasture land, in addition to designing the basic layout of the complex (see Fig.4.4).

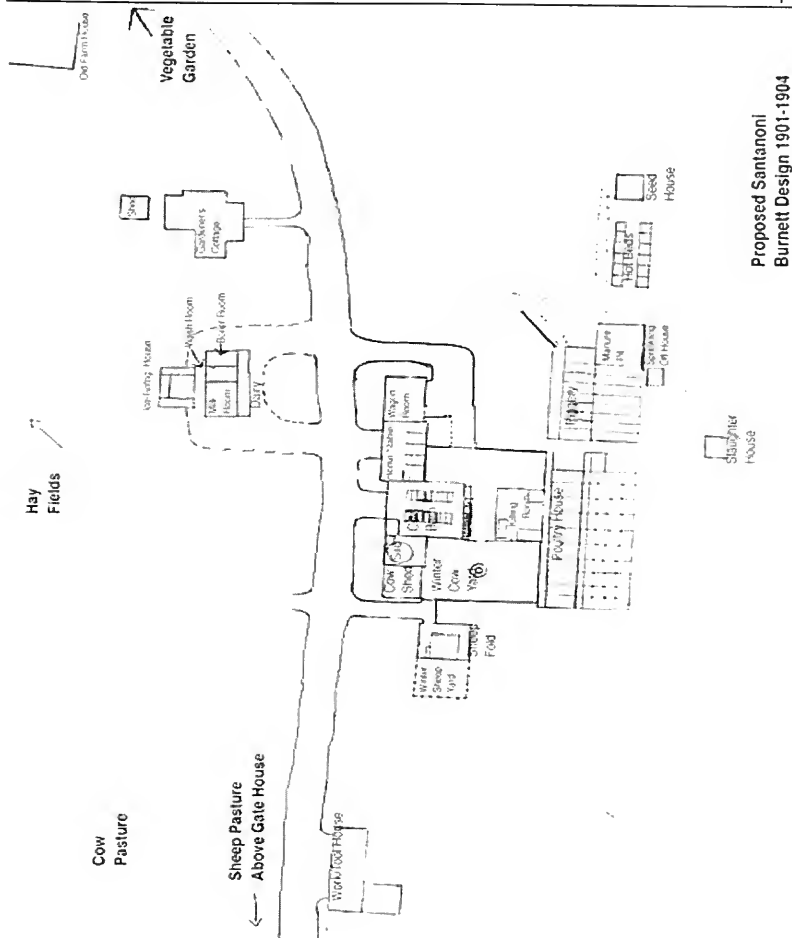


Fig. 4.4 Proposed Burnett-Santanoni Design Plan

The original barns were located at an elevation of about 1673 feet. The entire farm site from the lowest point of the marshy land south of the original barns to the top of the cleared land was approximately 1650 feet to 1752 feet.

The difference of about one hundred feet on a site about one hundred and thirty eight feet in depth made for a steep site.²⁰² While the sloping site clearly was a challenge, Burnett used it to his advantage. The south facing slope offered a prime site for a dairy and a piggery. The Pruyn family also wanted hens for eggs, sheep for meat and wool, and vegetables for daily meals. The primary and secondary structures to meet these needs were sited in relation to the contours of the original farm site.

The Dairy Department

The main business of the Santanoni Farm was dairy. The dairy department at Camp Santanoni relied upon two primary sets of buildings. The barns and the “creamery” worked in conjunction with one another. The lower level of the barns was the primary working space for the cattle (see Fig. 4.5).



Fig. 4.5 Back of Santanoni Barns

²⁰² United States Geological Survey. Newcomb, New York, (Reston, VA: U.S. Geological Survey, 1989). These figures based on contour and elevation lines from this map.

The lower level section of the old barns was used as a the dairy milking room.

The Guernsey cows were led into the barn through a sliding door on the east side

of the room (see Fig. 4.6).

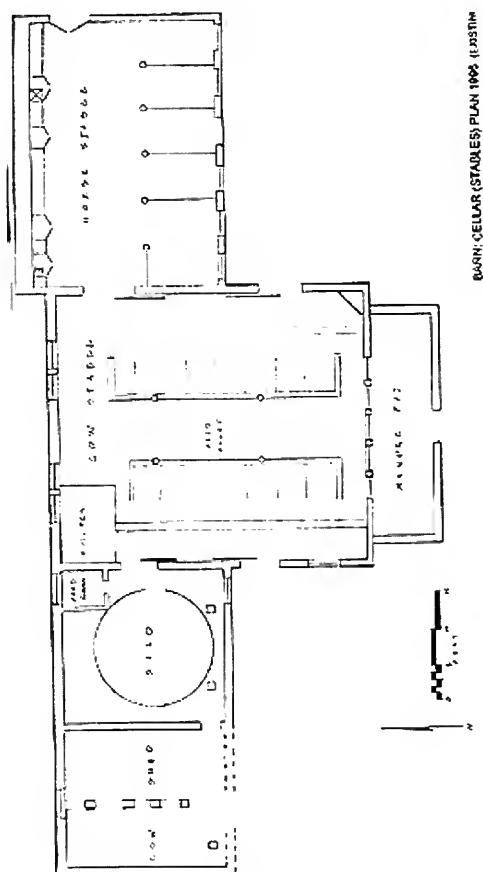


Fig. 4.6 Existing Barn Plans from Farm Complex HSR

Each cow had its own stanchion marked with a name plate placed above the stall (see Fig. 4.7).²⁰³



Fig. 4.7 Interior Cow Stanchions with Manure Trough

The cows received water in the stalls by pressing their nose into a watering bowl. A mechanism inside the bowl triggered a faucet to open, allowing water to stream into the bowl. A manure trough was cut into the floor. The trough was continually washed out into the covered manure shed attached to the south side of the milking room (see Fig. 4.8).²⁰⁴ The Bull Pen was also located in the northwest corner of this room as well.²⁰⁵

²⁰³ *Annual Report of the Committee of Agriculture for the Year 1880*, "United States Department of Agriculture Report 1880," (Washington, D.C.:Government Printing Office, 1881). Notes that Deerfoot's cows were all noted as having their own name plates. Name plates and stanchions are still in the barn at Santanoni.

²⁰⁴ Edward Burnett, *New York Farmers*, January 24, 1889, 20. Burnett relied upon the covered manure shed.

²⁰⁵ Wesley Haynes, *Historic Structures Report: Farm Complex, Santanoni Preserve, Newcomb, NY*, July 1996.

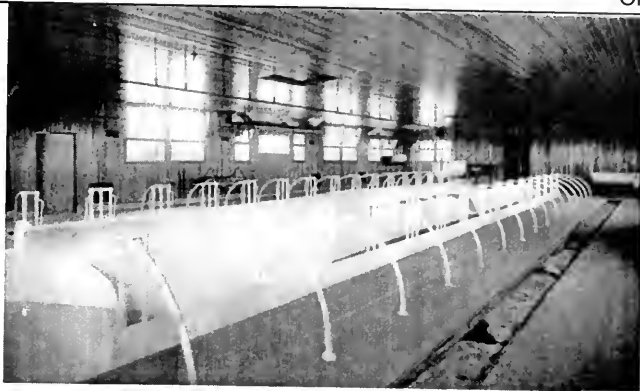


Fig. 4.8 Burnett/Hopkins Commercial Dairy Interior

The general layout of the Santanoni barns was in keeping with Burnett's basic plans for barn complexes. The upper level was for hay storage while the lower level, built into the side of a hill, was used to house the milking room (see Fig. 4.6). To one side of the milking room should be a cow barn and on the other a horse stable.²⁰⁶ The Santanoni barns were designed in a similar manner, the only deviation from that plan was the addition of a silo between the cow barn and the cow shed on the west end of the barn complex. Additionally, Burnett built a wagon shed off the east wing of the complex. This section was probably used for storing wagons and implements used in the haying season (see Fig. 4.9).²⁰⁷

²⁰⁶ Edward Burnett, *New York Farmers*, January 24, 1889, 20 & 21.

²⁰⁷ Adirondack Mountain Museum. Santanoni Photograph Collection. Blue Mountain Lake, NY. Haying wagon pictures.



Fig. 4.9 Full Hay Wagon at Santanoni

The combination of hay and ensilage (most likely cobbage as used at Deerfoot Farm) was stored in the hay loft and the silo was used during the winter months to feed the cattle.²⁰⁸

Across the road to the north, the “Creamery” sat above the cow barns on a flat stretch of ground, probably regraded by Burnett (see Fig. 4.10).



Fig. 4.10 Santanoni Creamery & New Cottage on right

²⁰⁸ NYSDEC, Santanoni Document Collection. Delilah West Bissel, “My Memories of Pruyn’s Preserve at Newcomb,” typescript June 12, 1991. The silo was reportedly only used once as the season in the Adirondacks was not compatible with ensilage.

The dairy building consisted of three rooms, the milk room, the wash room, and the boiler room (see Fig. 4.11).



Fig. 4.11 Boiler in Dairy Building

Unlike Deerfoot, which took advantage of a hillside plan, the Santanoni dairy building was on a single level. It operated in much the same manner as Deerfoot and other Burnett designs.²⁰⁹ Burnett was enormously interested in maintaining the sterility of the dairy barn. Numerous studies and volumes of books were published on the matter of “dairy bacteriology” by the time Burnett

²⁰⁹ Alfred Hopkins, *Modern Farm Buildings*. New and Revised Third Edition, (New York: Robert M. McBride & Co., 1920). Hopkins notes in his book that the separation of the dairy and cow barns was an old system that was usually not practiced any longer (1920). The designs that he published still had the cow barns and dairy in separate buildings, just not to the same extent as Burnett designed at Santanoni.

was establishing the site plans for Santanoni.²¹⁰ The system was clearly laid out by the creamery design. The milk was taken from the cow barn milk room, already weighed and recorded, to the platform under the shed roof at the dairy building in five gallon cans.²¹¹ The milk was then carried into the milk room and poured into pans in the deep set method of immersion into ice cold water, as described in Chapter Two at Deerfoot Farm(see Fig. 4.12).²¹²

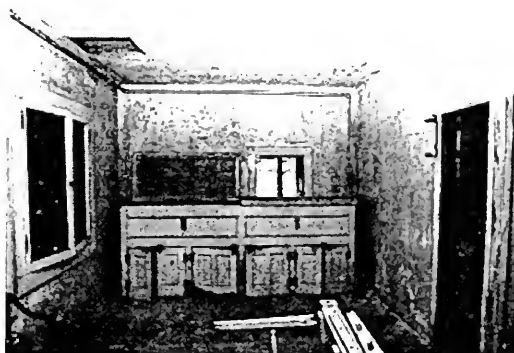


Fig. 4.12 Milk Room of Dairy Building

The empty cans were returned to the washroom, where they were sterilized and stored until the next milking (see Fig. 4.13).

²¹⁰ H.W. Conn, PhD. *Practical Dairy Bacteriology*, (New York: Orange Judd Co., 1908). Burnett was probably aware of these books and was one of the earliest believers in the theory of bacteria in milk.

²¹¹ NYSDEC. Santanoni Document Collection.

²¹² Wesley Haynes, *Historic Structures Report: Farm Complex, Santanoni Preserve, Newcomb, NY*, July 1996. The separation machine currently at the site was a later addition.

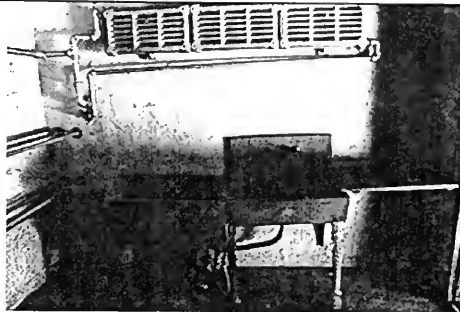


Fig. 4.13 Wash Room with sink and plumbing in Dairy Building

The separated milk and cream was taken out the rear door of the creamery and stored in the “Ice House” directly behind (see Fig. 4.14).



Fig. 4.14 View to Santanoni Farm with Ice House behind Creamery

The “Ice House” was probably more of a refrigeration house than a true ice house. The frame structure sat on a cement foundation. Similar to the floor tanks at Deerfoot, the twenty gallon milk cans were probably submerged in the

cement tanks along the walls of the building and surrounded with ice and ice water until shipment (see Fig. 4.15)



CONCRETE VAT IN WHICH THE TWENTY-QUART CANS ARE PACKED IN ICE

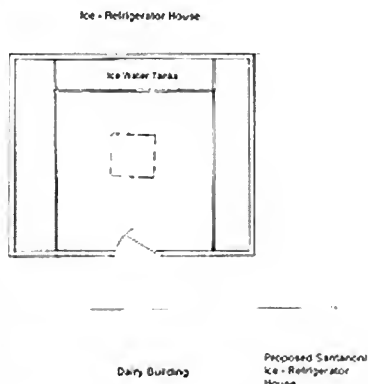


Fig. 4.15 Typical Refrigerator Room & Proposed Santanoni Plan

Portions of the Santanoni milk were sent immediately to the Main Camp while a volume was sold outside the preserve along with cream and butter, which was worked and packaged in the milk room.²¹³

The Piggery

The extracted buttermilk from the Creamery was sent through pipes to one of the other major departments of the Farm Complex, the piggery (see Fig. 4.16).

²¹³ NYSDEC. Santanoni Document Collection. Delilah West Bissel, "My Memories of Pruyn's Preserve at Newcomb," typescript June 12, 1991. Newcomb residents still have bottles with Santanoni embossed on them.

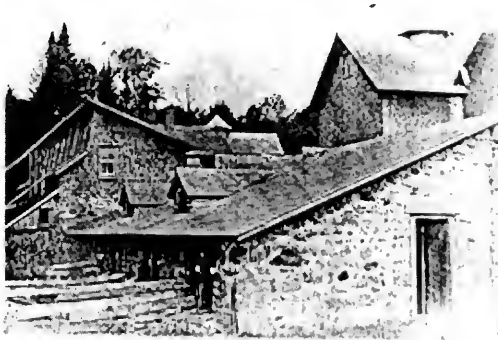


Fig. 4.16 Piggery & Poultry House to left with Sheep Fold roof to rear

The Piggery and pens were sited just to the east of the Poultry House, below the barn complex. The Piggery housed the imported Berkshire pigs. Hams, bacon, and other pork products, stored in numerous walk in refrigerator rooms in the kitchen wing of the Main Camp, were a mainstay throughout the summer months. The Piggery was built into a bank against the side of the sloping hill and faced south. It was composed of eight pens inside the stone structure and an additional eight exterior runs (see Fig. 4.17).

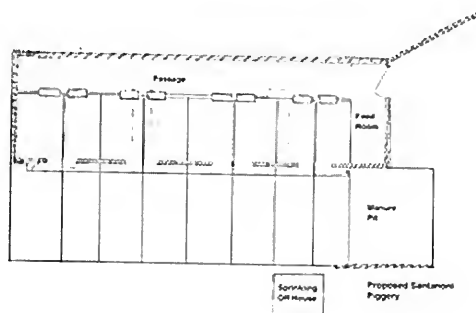


Fig. 4.17 Proposed Piggery Plan

The site was probably regraded by Burnett to allow for the pig runs on the slope. The pigs were fed in troughs filled by the herdsman and accessed by a door on the east wall. A feed room was probably also in the interior plan. The smell inside the piggery was ventilated through two gables as well as four windows on the south wall overlooking the pig runs. Manure was channeled out of the interior pens by sloping the floors to the outside. The manure was channeled in a trough into a manure pit on the east end of the piggery building by way of a trough running along the south wall (see Fig 4.18).



Fig. 4.18 Pig exiting Piggery stepping into manure trough

The small structure just below the Piggery was probably a small shelter used as a “sprinkling off” bin.²¹⁴ The liquid manure piped off the manure pit, which was probably covered, was saved in this “sprinkling off” bin and used on the fields as fertilizer. The other ancillary buildings were the Slaughter House, located farther down the hillside away from potential bacteria of the piggery, and the smoke house which was located around the corner from the farm on the opposite side of the road towards the Main Camp.²¹⁵

The Poultry House

The Poultry House located to the west of the Piggery enclosed the southern side of the cow yard (see Fig. 4.4). The positioning of the Poultry House opposite the barns was strategic. The high elevation of the Poultry House barricaded the cows by cutting down on wind that could adversely affect the temperature of the cows, which would, in turn, affect milk production. The

²¹⁴ Alfred Hopkins, *Modern Farm Buildings*. New and Revised Third Edition, (New York: Robert M. McBride & Co., 1920) 45-49. Hopkins discusses the use of the liquid manure as a useful material and that it should be collected in such a manner as discussed above.

Poultry House was a long, eighteen foot wide building with a short wing jutting out into the cow yard (see Fig. 4.16). The long section of the building contained nine coops with roosts, a feed room, and a long passage (see Fig. 4.19).

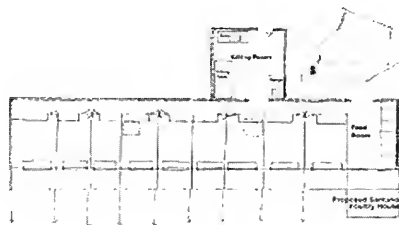


Fig. 4.19 Proposed Poultry House Plan

The upper section on the south side of the building was a wall of two over two windows. Below the windows was a long shedlike section with small openings for admittance of the Wyandotte Chickens into long, wire enclosed pens.²¹⁶ The short north wing of the poultry house was primarily used as the killing room. This room probably contained a killing stand, a range or stove (the chimney stack is visible in photographs), and a sink. There were two windows on the east side of the wing (see Fig. 4.20) There was probably an entry on the north wall of the wing and one from the passage in the poultry house.²¹⁷

²¹⁵ These suppositions are based on other Burnett works discussed in Chapter Three. There are no photographs of the piggery area below the actual stone building.

²¹⁶ This description is based on other Burnett designs discussed in Chapter Three. Also the information on the design is based on photographs of Santanoni from the Adirondack Museum in comparison to poultry houses described in A.F. Hunter's *Practical Farm Buildings*.

²¹⁷ This description is based on other Burnett designs discussed in Chapter Three.

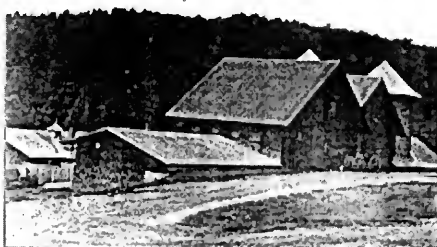


Fig. 4.20 Santanoni Farm Complex with Poultry House roof

The Sheep Fold

The final animal building in the group was the Sheep Fold (see Fig. 4.21).

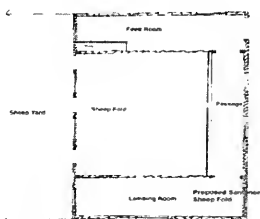


Fig. 4.21 Proposed Sheep Fold Plan

The black faced Highland sheep were excellent animals for clearing lands (see Fig. 4.22).

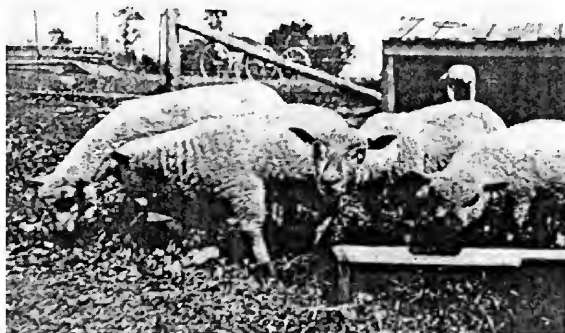


Fig. 4.22 Black faced Highland Sheep at Santanoni

These animals were kept, probably, as part of the farm for their clearing of pasture and rooting out rocks rather than for food or wool, but they were certainly used in this manner. The difficulty in keeping land clear in the rocky terrain of the Santanoni Preserve probably made these animals invaluable. The Sheep Fold was sited to the east of the barns, and like the Poultry House was used to shelter cows from the wind when in the cow yard in winter. The Sheep Fold was a simple frame structure. Hay was stored for food in the upper level. The lower level contained a small feed room, a lambing room, the sheep fold (room), and a passage. The sheep Fold section of the lower level

connected to an enclosed sheep yard, probably located to the east, by three small doors at ground level.²¹⁸

Additional Farm Buildings

The primary shelters and secondary buildings comprised the majority of the farm complex design, however, several other buildings were probably also part of the Burnett design (see Fig. 4.4). The Work/Tool House was located to the west of the farm complex and would have been the first building seen when coming upon the farm complex from town (see Fig. 4.23).

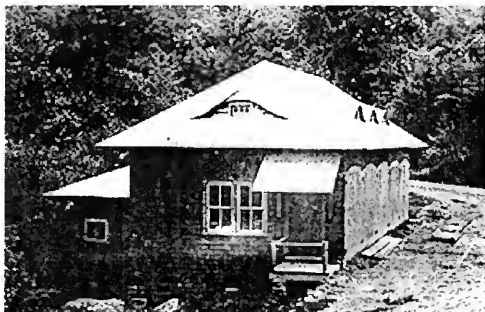


Fig. 4.23 Tool House at Santanoni

The utilitarian nature of this type of building does not leave much in the way of records. Similar structures of Burnett design leave little description of the interior arrangement of space. It has been reported that tools were stored and repairs to metal work needed throughout the estate were made here.²¹⁹ The

²¹⁸ This description is based on Burnett designs discussed in Chapter Three.

²¹⁹ Wesley Haynes, *Historic Structures Report: Farm Complex, Santanoni Preserve, Newcomb, NY*, July 1996.

only other remaining building in the Burnett plan was the New Gardener's Cottage (see Fig. 4.24).



Fig. 4.24 New Gardener's Cottage

This cottage was located next to the Dairy, however, still at a safe distance to prevent any unneeded contact. It is unlikely that Burnett had an active hand in the design of this structure. However, in addition to choosing the site of the cottage, he would have supplied the architect of the building with information about the number of men working on the farm and whether their families would be moving to the site. This information would be incorporated into the design and layout of the interior space.

Fields and Pastures

The remaining space surrounding the farm complex was probably laid out by Burnett (see Fig 4.4). In addition to the cement based hot beds near the Piggery, complete with a seed house, pasture for the Guernsey herd on the hill across from the barns was set aside (see Fig 4.25).



Fig. 4.25 Guernsey Herd in Pasture with Tool House below

Additional fenced pasture was set aside above the Gate House for sheep (see Fig.4.26).



Fig. 4.26 Sheep in pasture above Santanoni Gate House

Pigs may also have been set out in the fields above the farm complex. A large fenced vegetable garden was laid out beyond the Smoke House on a slowly

sloping hillside (see Fig. 4.27), and to the east of the upper cow pasture beyond the Dairy building (see Fig. 4.14).



Fig. 4.27 Vegetable Garden beyond Farm Complex

The largest section of cleared land was most likely reserved for hay fields. The animals of the farm were dependent on the hay as a source of food throughout the long winter in the Adirondacks. The hay fields were plowed and the rocks removed and seed planted for the following season. Little draining was required to maintain these fields as they were located well above the low lying swampy area below the farm complex.²²⁰ The fencing around the hay fields and animal pastures was primarily made of wood posts with wood planks, “Virginia fences, or of wire or wire mesh. Gates into these areas were often metal piping with wire mesh (see Fig. 28 & 29).²²¹

²²⁰ Adirondack Mountain Museum. Santanoni Photograph Collection. Pasture, vegetable gardens, and hay field siting based on photographs in relation to farm buildings and topography.

²²¹ Adirondack Mountain Museum. Santanoni Photograph Collection. Based on photographs of animals in pasture.

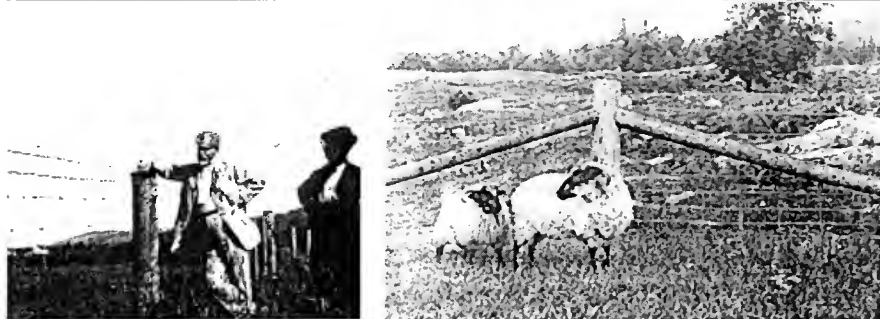


Fig. 4.28 & 4.29 Santanoni Farm fencing types

The Santanoni -Burnett Plan

The “Plan Showing Milking Barn as a Separate Compartment” by Edward Burnett published in Alfred Hopkin’s book differs in building design but has similarities to the Santanoni layout (see Fig. 4.4). The Plan was probably created after the establishment of the Farm Complex at Santanoni, but the differentiation between the areas associated with milk production are evident. The Hay Barn, Feeding Barn, Milking Barn, and Dairy were all separated from one another. The use of interior passages in the buildings and the fenced in cow yard are also reminiscent of Santanoni. The Dairy was connected to the rest of the buildings but was compartmentalized similarly to Santanoni. The silo was separated from the barns, unlike Santanoni’s which was incorporated into the barn. Burnett never seemed to grasp or appreciate the silo as a part of the farm but incorporated it into many gentlemen’s estates as part of the experimental nature of the site. The detached silo in the Burnett Plan was

probably in response to working with Alfred Hopkins who had an affinity for incorporating some sort of tower into his designs for architectural embellishment.²²²

Additional portions of the Santanoni Farm Complex, including the poultry coops, small hen house, an additional hen house, and a third cottage were probably not part of the Burnett plan. There is no documentation at this time to claim that Burnett designed or planned poultry coops. The additional Hen House and small Hen House south of the poultry coops, plotted in the Historic Structures Report Site Plan #2, were probably additions to the farm after the Burnett plan was completed in 1904 (see Fig. 4.30). The siting and irregularity of the footprint of the structures are uncharacteristic of a Burnett design. The third farm cottage is definitely not in the original Burnett plan, it was purchased at a much later date from Sears Roebuck & Co.²²³

²²² Alfred Hopkins. *Modern Farm Buildings*. New and Revised Third Edition, (New York: Robert M. McBride & Co., 1920)101.

²²³ Wesley Haynes, *Historic Structures Report: Farm Complex, Santanoni Preserve, Newcomb*, NY, July 1996.



Fig. 4.30 Santanoni HSR Site Plan #2

The Santanoni site is a representative gentlemen's farm designed by Edward Burnett. The regularity of siting of the buildings and the careful considerations of room arrangements can be seen in the remaining structures at the Santanoni Preserve. Excellent records of the breeding and production of the Santanoni Herd attest to the Burnett method of dairying. Proper design and care of the farm, care of the animals, and accurate records were mandatory elements in a good gentleman's farm. The farm supplied the owners, guests, and employees of the estate with ample food and drink. The farm never made a profit as Robert Pruyn had hoped, but he kept the farm running as a necessary element to his summer estate and an attractive embellishment to show off to his wealthy friends on holiday in the Adirondacks.

Conclusion

*"Do not tear down the hunter's cabin
and leave the rich man's villa untouched on State land."
Mr. Verplank Colvin at the New York Farmer's*

A mile into the Adirondack woods inside the boundary lines of the Adirondack State Park, overgrown by small trees, grasses, and weeds, the Farm Complex of Great Camp Santanoni slowly vanishes from existence. As an intern at the site in the Summer of 1997, I was immediately struck by the desperate situation of the farm and the estate. This was where I was introduced to Edward Burnett and model farms. All too often, architectural historians dismiss isolated barns and outbuildings as expendable structures built by nameless artisans without forethought. The ephemeral nature of the materials and the tremendous use that the buildings withstood when used by animals aged these sites at a faster pace. The damage over time creates funding problems when considered for preservation. Instead of restoring the structures, often they are simply destroyed for lack of funding.

Robert Pruyn's estate in Newcomb, New York, is the only publicly owned historic resource displaying Edward Burnett's work. Although, many of the Burnett designed farm buildings on the site were demolished by the state in the 1970's responding to Article 14 of the New York State Constitution requiring the Park to be maintained as "Forever Wild", the site offers tremendous potential because of its archeological and interpretive value. After becoming historic

sites, the large estates built in the late 19th century do not have the resources or interest in interpreting the farm complexes on their grounds, and there is more interest in restoring the large mansion and extensive landscaped grounds. Santanoni's farm complex is only a mile from the estate entrance and is often the destination for visitors who do not want to or cannot travel five miles to the main camp along a dirt road. This Burnett designed complex of buildings could be interpreted within the context of other Adirondack Great Camps and the significant number of Hudson River estates where he completed commissions for wealthy patrons.

Great Camp Santanoni is one of Edward Burnett's earliest complete model farm designs. The influence of his family estate, Deerfoot Farm, is evident in the layout of the site. The separated dairy building, the banked barns, the enclosed cow yard, the carefully placed piggery, poultry house, and sheep fold are earmarks of Burnett designs displayed at other estates. Archeological digs would probably unearth a carefully planned layout of pipes and drainage tiles throughout the site as well as substantiate the regrading of the site discussed in Chapter Four. A horticultural inventory of the site could lead to specific plant life imported to the site by Burnett. By understanding the extraordinary efforts involved in developing the farm site, the entire estate can be better understood as an early 20th century answer to the American virtuous farmer.

Edward Burnett owed many of the ideas and values underlying his career to the Jeffersonian Republicanism discussed in Chapter One. His father, Joseph, received his education, went to work, and succeeded. He could have chosen to stay in the city of Boston, comfortably mingling with the elite society, but instead he turned to the country and established a farm. Edward followed in his father's footsteps. He went to school, attended Harvard, married well, and then returned to his family's estate. Edward, however, was part of a new generation of Americans who were pushing America forward. While manufactories were built in cities, Edward built a factory in the country. He straddled the line between virtuous farmer and gentleman, and progressive American. His success brought him fame in the agricultural world. That fine reputation elected him to Congress and gave him access to high society. His contacts with wealthy men, with expendable money and the desire for a country retreat, and Burnett's expertise in agriculture allowed him to open an office in New York City, hire architects and engineers, and receive numerous commissions.

Edward Burnett contributed interesting designs to the field of agricultural science. He was important in the importation of better breeds of animals, especially cattle, from England. He stocked gentlemen's estates with cattle and taught workers how to properly maintain a dairy farm. He was well aware of the dangers of germs when working with animals and animal products. Gardens and animal yards were specifically sited away from one another. Inside the

farm buildings, he was certain to separate food, animals, and manure from each other so as not to infect one with another. He required appropriate feeding and milking schedules for the estate herd as well as rules for the farm workers responsible for each operation. In other words, he was well aware of and incorporated the scientific advances in agriculture into his designs.

He took special care to site buildings with differing uses and animals so unnecessary contact would not occur while maximizing the use of space and form. Hay fields, crop fields, and drainage areas were designed to relate to the farm buildings without overpowering the appropriate picturesque look of a gentleman's farm. At Santanoni, Burnett responded to the forest setting and used local materials, while at other estates he used modern materials such as cement fence posts. The needs of the owner were addressed in practical ways at the farm. Burnett provided a means for healthy food in remote areas while allowing wealthy men to grasp the Republican ideals of an agrarian land and rural retreat.

It is clear from the work of Edward Burnett and his firm that gentlemen's estates were, in fact, fully designed. The ideal of the *f'erme ornee*, an ornamented farm with origins in 18th century English estates, was a desired goal.²²⁴ Farm buildings on many large estates were worked into the landscape and had a direct and important link to the main house. A complete picture of historic estates and Great Camps such as Santanoni can only occur when the

²²⁴ Christopher Thacker, *The History of Gardens* (Berkeley: University of California, 1979) 182.

entire site is considered. Great Camps and American Estates which incorporated fully designed, and integrated, agricultural and “farm” landscapes share in the American version of the classical ideal of the rural. As such, they represent an important continuity in the cultural landscape of the United States. The farm site at Santanoni is decidedly deserving of preservation initiatives. Already, the public has expressed its approval of such methods in a survey conducted at the site in 1994. As part of our American cultural heritage, this farm site and other Burnett designed farms, hopefully unearthed by future historians, deserve immediate preservation action. It would be wonderful if this study could aid in such an endeavor as well as resurrect some of the work of Edward Burnett, farm designer.

Bibliography

Adirondack Mountain Museum. Santanoni Photograph & Guest Book Collection. Blue Mountain Lake, NY.

Allen, Lewis F. *Rural Architecture*. New York: C.M. Saxton, 1852.

American Guemsey Cattle Club. *The Story of Half a Century: 1877 - 1927*. Peterboro, NH, 1927.

Annual Report of the Committee of Agriculture for the Year 1880, "United States Department of Agriculture Report 1880." Washington, D.C.: Government Printing Office, 1881.

Arthur, Eric and Dudley Witney. *The Barn, a Vanishing Landmark in North America*. Boston: New York Graphic Society Ltd., 1977.

Atack, Jeremy and Fred Bateman. *To Their Own Soil, Agriculture in the Ante-bellum North*. Ames, Iowa: State University Press, 1976.

Atlas Portland Cement Co. NY. *Concrete Construction About the Home and on the Farm*. New York: The Atlas Portland Cement Co., 1905.

Bacon, Donald et al. *The Encyclopedia of the United States Congress*. New York: Simon & Schuster, 1995.

Beastall, T.N. *A North Country Estate*. London: Phillimore & Co, Ltd., 1975.

Benes, Peter editor. *The Farm*. Boston: Boston University, 1988.

Benson, Albert Emerson. *History of Saint Mark's School*. Southborough: Alumni Association, 1925.

Blake, Rev. John L. D.D. *The Modern Farmer or Home in the Country*. Auburn, NY: Derby & Miller, 1854.

Bidwell, Percy Wells, PhD. and John I. Falcomer, PhD. *History of Agriculture in the Northern United States 1620 - 1860*. Washington: Carnegie Institution of Washington, 1925.

Biltmore Estate Curitorial Department. Files on Edward Burnett. Contact: Eileen Heeran, Assistant Archivist.

Bryan, John M. *Biltmore Estate*. New York: Rizzoli International Publications Inc., 1994.

Buck, Solon J. *The Agrarian Crusade. A Chronicle of the Farmer in Politics*. New Haven, CT: Yale University Press, 1920.

Burnett, Edward. Addresses to the *New York Farmers'* [Club]. 1887-1905.

Catalogue of the Officers and Alumni, and Scholars of Saint Mark's School 1865-1901. Boston: Mills and Kinght Company, 1901.

Conn, H.W. PhD. *Bacteria in Milk and its Products Designed for the Students in Dairying and For All Others Concerned in the Handling of Milk, Butter, or Cheese*. Philadelphia: P.Blackiston's Sons and Co., 1903.

Conn, H.W. PhD. *Practical Dairy Bacteriology*. New York: Orange Judd Co., 1908.

The Cultivator and Country Gentleman. Vol. L - LVII. Albany: Luther Tucker & Son, 1885-1892.

Donaldson, Alfred L. *A History of the Adirondacks*, vol. II. Fleischmanns, NY: Purple Mountain Press, 1992.

Eberhard, Lois. Interview with the author November 1997.

Endershy, Elric, Alexander Greenwood, and Dan Larkin. *Barn, the art of the working barn*. New York: Houghton Mifflin Company, 1997.

Engel, Robert. *A History of Camp Santanoni, The Adirondack Retreat of Robert Pruyn*. unpublished proposed thesis for the New York College at Oneonta, 1996

Farm Buildings, new and enlarged edition. Chicago: The Breeder's Gazette, 1911.

Farm Conveniences, a practical hand-book for the farm. New York: Orange Judd Company, 1906.

Ferleger, Lou. editor. *Agriculture and National Development and Views of the Nineteenth Century*. Ames, Iowa: Iowa State University Press, 1990.

Glassie, Henry. "Barn Building in Otsego County, New York." *Geoscience and Man*, vol. V, June 10, 1974, 177-235.

Gill, Barbara and Dudley Witney. *Summer Places*. New York: Methuen, Inc., 1978.

Graham, Frank Jr. *The Adirondack Park*. New York: Alfred Knoff, Inc., 1978.

Hancock, David. *Animals and Architecture*. New York: Praeger Publishers, 1971.

Harvard University Archives. File on Edward Burnett. Cambridge, MA.

Haynes, Wesley. *Camp Santanoni Main Camp Complex Documentation, Stabilization and Maintenance Plan*. September 1993.

Halsted, Byron. *Barn Plans and Outbuildings*. New York: Orange Judd Co., 1881.

Haynes, Wesley. *Historic Structures Report: Farm Complex, Santanoni Preserve, Newcomb, NY*. July 1996.

Holy Bible. King James Version. Nashville: Thomas Nelson Publishers, 1972.

Hopkins, Alfred. *Modern Farm Buildings*. New and Revised Third Edition. New York: Robert M. McBride & Co., 1920.

Hopkins, Alfred. *Modern Farm Buildings*. Second Edition. New York: Robert M. McBride & Co., 1913.

Hunter, A.F. *Practical Farm Building, Plans & Suggestions*. East Walpole, MA: F.W. Bird & Son, 1985.

Jefferson, Thomas. *The Garden and Farm Books of Thomas Jefferson*. edited by Robert C. Baron. Golden, Colorado: Fulcrum, Inc., 1987.

Johnson, Allen ed. *Dictionary of American Biography*. Vol. 3. New York: Charles Scribner's Sons, 1929.

Journal of the Royal Agricultural Society of England. second series, vol. 18. London: John Murray, 1882.

Kaiser, Harvey. *Great Camps of the Adirondacks*. Boston: David R. Codine, 1982.

Kelsey, Darwin P. editor. *Farming in the New Nation*. Washington: The Agricultural History Society, 1972.

Klamkin, Charles. *Barns, their history, preservation, and restoration*. New York: Hawthorn Books, Inc., 1973.

Lambton, Lucinda. *Beastly Buildings, The National Trust Book of Architecture for Animals*. London: Jonathan Cape Ltd., 1985.

Lee, Guy H. "Estates of the American Sportsman No. 4: Santanoni, the Adirondack camp of Robert C. Pruyn, Esq. of Albany, New York," *The Sportsman*, October, 1929, VI:4, pp. 70-73.

Library Company of Philadelphia. Centennial Trade Card Collection. Philadelphia, PA.

Loudon, John Esq. *A Treatise on Forming, Improving, and Managing Country Residences*. vol. I & II. London: Longman, Hurst, Rees, and Orme, 1806. reprinted 1971 Gregg International Publishers Limited: Westmead, England.

MacKay, Robert B., Anthony K. Baker and Carol A. Traynor. *Long Island Country Houses and Their Architects 1860-1940*. New York: W.W. Norton & Co., 1997.

Morton, John C. editor. *A Cyclopaedia of Agriculture, practical and scientific*, vol. I & II. London: Blackie and Son, 1856.

National Historic Register Nomination Form. Great Camp Santanoni, Newcomb, NY, 1982.

New York State Department of Environmental Conservation. Documents, Drawings, Photos, and Research Files. Colonie, NY. Contact: Chuck Vandrie, Historic Preservation Officer.

New York Department of Environmental Conservation. High Peaks Unit Management Plan, Final Draft, July 1996. <ftp://zappa.northnet.org/pub/dec/hpump.asc>.

Noble, Allen G. and Richard K. Cleek. *The Old Barn Book*. New Jersey: Rutgers University Press, 1995.

- Noble, Nick. Presentation to the Southborough Historical Society. Video Recording.
- Olmsted Associates Files. Washington, D.C.: Library of Congress.
- Olmsted National Historic Site Archives. Brookline, MA.
- O'Neill, J.W. reedited with additions. *The American Farmer's New and Universal Handbook*. Philadelphia: Charles DeSilver, 1859.
- Perry, P.J. editor. *British Agriculture 1875-1914*. London: Methuen & Co., Ltd., 1973.
- The Political Graveyard. [www://portfolio.com/tpg/bio/burk-burn.html](http://portfolio.com/tpg/bio/burk-burn.html).
- Radford, William and David and Joan Loveless. *Practical Plans for Barns, Carriage Houses, Stables, and Other Country Buildings*. Stockbridge, MA: The Berkshire Traveler Press, 1978.
- Rasmussen, Wayne D. and Gladys L. Baker. The Department of Agriculture. New York: Praeger Publishers, 1972.
- Roberts, Isaac Phillips. *The Farmstead, the making of the rural home and the layout of the farm..* London: The MacMillan Company, 1900.
- Rossiter, Margaret W. *The Emergence of Agricultural Science*. New Haven: Yale University Press, 1975.
- Saint Mark's School Archive. Photograph & Document Collection. Southborough, MA.
- Schneider, Paul. *The Adirondacks, a history of America's first wilderness*. New York: Henry Holt & Co., 1997.
- Schultz, LeRoy G. compiled by. *Barns, Stables and Outbuildings*. North Carolina: MacFarland & Co., Inc. Pub., 1986.
- Selitzer, Ralph. *The Dairy Industry in America*. New York: Books for Industry, 1976.
- Sheldon, J.P. *Dairy Farming*. New York: Cassell, Petter, Galpin & Co., 1883-5.
- Shi, David E. *The Simple Life*. New York: Oxford University Press, 1985.
- Thacker, Christopher. *The History of Gardens*. Berkeley, CA: University of California Press, 1979.
- Thompson, John H. editor. *Geography of New York State*. New York: Syracuse University Press, 1966.
- Thorton, Tamara Platkins. *Cultivating Gentlemen*. New haven: Yale University Press, 1989.
- United States Geological Survey. Newcomb, New York. Reston, VA: U.S. Geological Survey, 1989.
- United States Patents. Washington, D.C.: United States Patent Office.

Vaughan, Elinor Burnett. Interview with the author March 1998.

Vaughan, John Burnett. Interview with the author March 1998.

Weller, John. *Modern Agriculture and Rural Planning*. London: the Architectural Press, 1967.

Woodward, Carl Raymond PhD., *The Development of Agriculture in New Jersey*. New Jersey: New Jersey Agricultural Experiment Station, Rutgers University, 1927.

Zukowsky, John. *Hudson River Villas*. New York: Rizzoli International Publications, Inc., 1985.

Appendix: Timeline for Edward Burnett

- 1847 *Deerfoot Farm begun by Joseph Burnett*
- 1849 Edward Burnett born March 16, 1849,
- 1854 *Cattle Imported to Deerfoot Farm by Joseph Burnett*
- 1861 Sent to St. Paul's School in Concord, New Hampshire
- 1865 Returnd to Southborough to attend St. Mark's School
- 1867 Graduated from St. Mark's School and begins studies at Harvard University
- 1871 Graduated from Harvard University
- 1872 Married Mabel Lowell Russell April 3, 1872
- 1873 First child (son) James, born
Won Blue ribbon at New York State Fair in Albany
- 1874 Second child (son) Joseph, born
- 1876 Possible trip to Philadelphia for Centennial Exhibition
- 1878 Third child (daughter) Francis born
- 1879 Fourth child (daughter) Esther born
Performed experiments on butter with Dr. J.R. Sturtevant at Deerfoot
- 1880 Deerfoot Farm article published in *US Agricultural Department Reports*
- 1881 Fifth child (daughter) Lois born
Deerfoot Farm article in *Journal of the Royal Agricultural Society of England*
Attended the Royal Exhibition at Derby in England
- 1882 Lectured at *New York Farmers* on Cattle Imports on December 18
- 1883 Patented Milk Stoppers and Truck
Lectured at the *New York Farmers* on dairying February 19
- 1885 Deerfoot Farm article published by Sheldon in England
Letter in *The Cultivator* on The Revised Jersey Rules, Aug. 20, p.684
Various notations of purchase/selling on Jerseys and Guernseys, June 11, June 18, June 25, July 23
- 1886 Letter in *The Cultivator* on Fees for Imported Jerseys, Apr. 7
Letter in *The Cultivator* on Mechanical Cream Separation, July 22
Letter in *The Cultivator* on Separating Cream from Milk, Aug. 19
Letter in *The Cultivator* on Cooling Milk, Aug. 26

1886-9	First President of the St. Mark's Alumni Association President of Bay State Agricultural Society
1887-9	Member of United States House of Representatives
1887	Experimented in feeding dairy cattle at Deerfoot Visited the Aylesbury Dairy Company in England in November
1888	Lectured at the <i>New York Farmers</i> on January 19 on practical dairying Member of the House Committee on Agriculture Unsuccessssful reelection campaign for House
1889	Lectured at the <i>New York Farmers</i> on January 24 on farm structures and fences
1890-2	Worked as consultant at Biltmore, Ashville, NC
1890	Continued importation of cattle for Vanderbilts Staten Island Estate Worked in New Jersey at Whippany Meadows draining pasture land Lectured at <i>New York Farmers</i> on December 11 on Reclamation of Waste Lands Worked on land clearing in Ipswich [MA?]
1892	Wrote an obituary for Dr. Joseph Thomas, Jan.7 in <i>The Cultivator</i>
1892-1900	Worked as General Manager of Florham Farms, Madison, NJ
1893	Lectured at <i>New York Farmers</i> on January 17 on weeds
1897	Joined the <i>New York Farmers</i> Club
1898	Lectured at <i>New York Farmers</i> on December 20 on Haying (notes constructing a hay barn)
1901-4	Designed Farm Complex with Robert Robertson and/or Delano & Aldrich at Robert Pruyn Estate, Great Camp Santanoni, Newcomb, New York
1903	Questioned Pinchot at the <i>New York Farmers</i> on February 17 on forestry on estate on the Hudson Spoke at <i>New York Farmers</i> Haying time Questioned Prof. L.H. Bailey of Cornell at <i>New York Farmers</i> on December 15 about State Roads
1904	Mabel, his first wife, died Opened an office in New York City as farm architect
1905	Questioned and made statements at <i>New York Farmers</i> on January 17 to Mr. Gentry of Biltmore Farm Berkshire Department Married second wife Ethel who is the widow of his younger brother Charles Seventh child born (son) Philip in Peterborough, New Hampshire
1906	Office at 11 East 24th Street, NYC, employing Alfred Hopkins, architect

	Designed Farm Complex at Fred. W. Vanderbilt's Estate, Hyde Park on the Hudson
1906-1907	Designed Farm Complex at Tracy Dows Estate, Rhinebeck, NY
prior to 1907	Designed Barn Complex for F.B. Lord, Cedarhurst, Long Island, New York
1907	Employed Alfred Hopkins, Architect, Stanley Cunningham, Jr. Architect, and Arthur Grinnell Rotch, Landscape Architect
1909	Edward's second child, Joseph, by his first marriage died Designed Farm barns and Dairy for J. Reed Whipple Co., New Boston, New Hampshire
1910	Eighth child born (daughter) Ann in Peterborough, New Hampshire
1912	Nineth child born (daughter) Kathleen in Rye, New York
1913	Tenth child born (daughter) Elinor in Peterborough, New Hampshire
1916	Employed A.E. Lyford, Civil Engineer, and F.S. Marlow, Architect Topographic Maps of International Garden Club, NYC completed
1917	Designed Harry S. Fisher Estate, Greenwich, Connecticut
1925	Edward died in 196 School Street, Milton, Massachusetts Nov. 5. Laid to rest in St. Mark's Churchyard, Southborough

*member of University Club in NYC dates unknown

*member Union Club in Boston dates unknown

Index

Biltmore	9, 10, 62, 64, 73, 126
Burnett, Joseph	11, 30, 33, 36, 41, 125
Camp Sagamore	9
Cedarhurst Dairy	77, 78, 127
Centennial Exhibition	8, 41, 122, 125
Centrifugal Machine	42, 43, 45, 46, 51, 60
Coe, W.R. Estate	81
Creamery	93, 97, 99, 100, 101
Crystal Palace	3
<i>Cultivator</i>	17, 18, 20, 21, 24, 27, 51, 121, 125, 126
Dairy, Deerfoot Farm	38, 41, 42, 45, 58, 59, 62, 75
Deerfoot Farm	10, 36, 37, 43, 44, 45, 46, 47, 50, 51, 52, 54, 55, 84, 97, 99, 116, 125
Dow Estate	68, 70, 71
England	2, 3, 4, 14, 17, 18, 23, 32, 46, 47, 50, 53, 65, 117, 125, 126
ensilage	97
experimental farm	14, 15, 22, 27, 29, 44
factory system	38, 39, 40, 41
Fisher Estate	76, 129
"Forever Wild"	115
Four Winds Farm	84
garden	1, 2, 3, 4, 64, 69, 73, 81, 110, 111, 117, 127
<i>Genessee Farmer</i>	16
Gore, Christopher	14, 15
great camp	11, 12, 86, 87, 115, 116, 118, 119, 122, 126
Guernsey (cattle)	51, 94, 109, 110, 125
Harvard	23, 26, 30, 34, 35, 36, 37, 56, 65, 117, 125
Hopkins, Alfred	67, 69, 80, 113, 126, 127
House Committee on Agriculture	53, 126
Hudson River	16, 82, 87, 116
Hunt, Richard Morris	63, 64, 66
Ice House	74, 100
industrial revolution	8, 29
International Garden Club	81, 127
Jefferson, Thomas	4, 5, 6, 7, 9, 13, 14, 20, 117
Jersey (cattle)	46, 51, 56, 59, 125
Lyndhurst	81
<i>Maine Farmer</i>	16
manure	24, 95, 103, 104, 118
McNamee, Charles	64

-
- Middlesex Agricultural Society 36, 41
 milk room 75, 77, 78, 80, 98, 99, 101
 Newcomb, New York 11, 86, 88, 115, 126
New England Farmer 13, 16
New York Farmers 16, 30, 55, 65, 66, 67, 89, 115, 125, 126
 New York State Agricultural Society 21, 22
 Olmsted, Frederick Law 10, 55, 63, 64, 65, 66
 Olmsted, John C. 69, 70, 71, 72, 73, 74
 pasture 37, 39, 57, 58, 70, 73, 91, 107, 109, 110, 111, 126
 patent 26, 42, 47, 48, 49, 50, 53, 125
 Piggery 69, 70, 93, 101, 102, 103, 104, 109, 116
 Pinchot, Gifford 63, 89, 126
 Poultry House 71, 72, 74, 102, 104, 105, 106, 107, 116
 Pruyn, Robert 11, 12, 67, 86, 87, 88, 89, 91, 93, 114, 115, 126
 refrigerator room 59, 101, 102
 Republican 4, 5, 6, 7, 117, 118
 Santanoni 11, 86, 88, 89, 90, 91, 92, 93, 96, 97, 98, 99, 100,
 101, 106, 107, 108, 110, 112, 113, 114, 115, 116,
 118, 119, 126
 Sausage Factory, Deerfoot Farm 37, 38, 55
 Sheep Fold 69, 75, 102, 106, 107, 116
 Southborough, MA 30, 31, 32, 33, 34, 36, 41, 42, 52, 125, 127
 Sloan, Sam 66
 Stetson Estate 80
 St. Mark's School 30, 32, 33, 34, 36, 41, 52, 65, 125, 126, 127
 St. Paul's School 32, 33, 36, 125
 Tool House 69, 108, 110
 Twombly, H. McKay 65, 73, 87, 89
 United States Department of Agriculture 23, 28
 Vanderbilt, Frederick 68, 80, 89, 127
 Vanderbilt, George 62, 63, 64
 wash room 59, 60, 78, 98, 100
 Whipple 77, 79, 127

Anne & Jerome Fisher
FINE ARTS LIBRARY
University of Pennsylvania

Please return this book as soon as you have finished with
it. It must be returned by the latest date stamped below.

ILL

RETURNED
UNIVERSITY OF PENNSYLVANIA
MAR 15 2008
INTERLIBRARY LOAN
UNIVERSITY OF PENNSYLVANIA
DEC 23 2008
INTERLIBRARY LOAN
UNIVERSITY OF PENNSYLVANIA
INTERLIBRARY LOAN

FISHER
FINE ARTS LIBRARY

FEB 26 1999

UNIV. OF PENNA.

3 1198 03746 6591



N/1198/03746/6591X

N/1198/03746/6591X